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SEPTEMBER 1969

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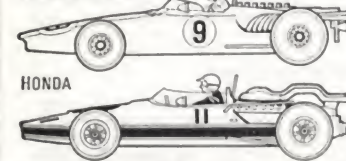
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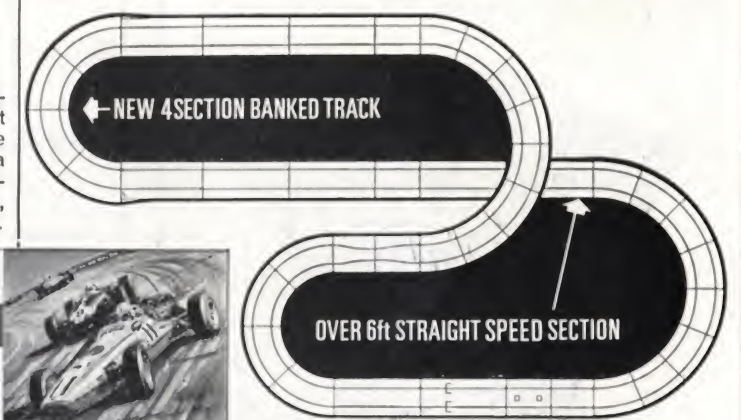
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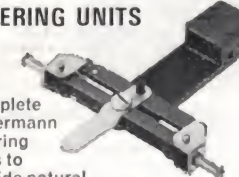
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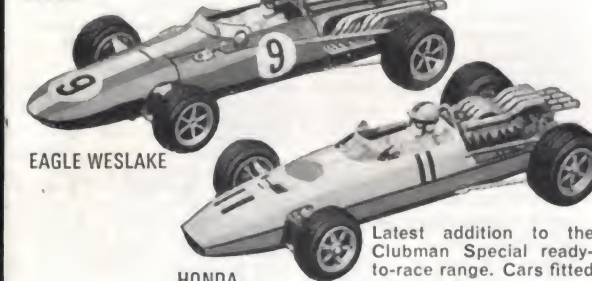
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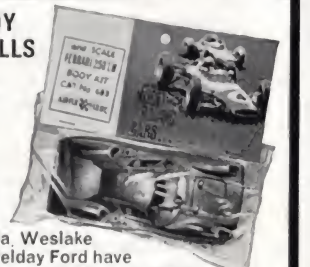
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GERMAN TANKS OF WORLD WAR II

The Complete Illustrated History of German Armoured
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Under its original title *Die Deutschen Panzer, 1926-45* this famous book by Dr. F. M. von Senger und Etterlin has long been regarded as the standard work on German tanks and armoured vehicles. There have been three editions of the German book, each one expanded and revised. Now—at long last—it is available in English, in a handsome, large new-size edition. The translation is by J. Lucas of the Imperial War Museum, working with Peter Chamberlain and Chris Ellis (who also contributed material about the Tiger tank). This just-published edition is more than just a translation of a world famous, much-sought work—the editors (well known to *Airfix Magazine* readers) have taken the opportunity to revise and expand parts of the original text, and include some new illustrations.

HISTORY AND DEVELOPMENT. In this book the section on History and Development covers the entire range of armoured fighting vehicles:

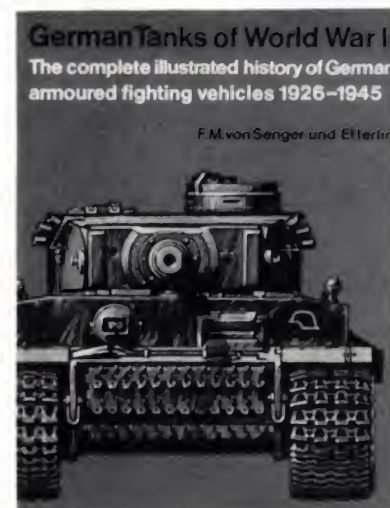
Panzerkampfwagen I-VI, the Czech vehicles in German service, armoured cars, light reconnaissance vehicles, eight-wheeled types, personnel carriers, experimental and amphibious vehicles, captured types in the German service.

There is a complete tabulated inventory of all German armoured fighting vehicle prototypes, production models and variants, keyed to the photographs, drawings and technical data by page number.

ILLUSTRATIONS. The Illustration Section contains 186 photographs of production models, prototypes, wood-
en models and variants, and an additional 170 drawings, mostly to a uniform scale of 1:73 showing clear and accurate fore and aft details; and side elevations, as well as plan details on all the major types.

DATA. Twenty pages of technical data give all known details of all the types referred to in the text and illustrations, and include information on external dimensions, weight, performance, armour, armament and crew. There is a table of production statistics for the period 1939-44, and a table showing the numerical tank strength of the German Army 1940-42.

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REVIEWERS' COMMENTS

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HOW TO OBTAIN. *German Tanks of World War II* is obtainable from your usual bookseller or model shop, price 95s.

In case of difficulty write to the publishers enclosing a cheque or P.O. for 99/6d (to cover postage and packing) and payable to Arms and Armour Press at 16 Pembridge Road, London W11.

Other Arms and Armour Press Books:

ROYAL FLYING CORPS TECHNICAL NOTES, 1916. *Airfix Magazine* said about this book—"A reprint of the manual issued to RFC personnel in 1916 and is packed with technical detail, maintenance notes, and scale drawings of the aircraft types used at the time by the RFC. There are also sections on wireless and engines, as well as a fascinating piece on aerial photography. This makes a most interesting reference book for anyone modelling World War I aircraft especially in larger scales. There are about

40 pages of scale drawings and 26 pages of text." Stiff paper covers. 30s. (1/3 p & p).

TANKS OF WORLD WAR I: BRITISH AND GERMAN by Peter Chamberlain and Chris Ellis is a comprehensive but concise account of the origin and development of World War I tanks. There are more than 60 pictures and drawings, many rare and hitherto unpublished. Appendices include detailed tables of specifications for all principal types described. 25s (1/6 p & p).

GERMAN INFANTRY WEAPONS OF WORLD WAR II by Lt.-Col. A. J. Barker includes small arms ammunition, pistols, sub-machine guns, rifles, machine guns, anti-tank weapons, grenades, mortars and other certain specialised pieces of equipment. Such famous names as Luger, Walther, Mauser, Bergmann and Schmeisser appear in the pages of this book with detailed descriptions of the weapons which bore them. There are 55 illustrations. 25s (1/6 p & p).

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AIRFIX magazine

AIRFIX magazine FOR PLASTIC MODELLERS

September 1969

Volume 11 No 1

Editor Chris Ellis

Cover Picture

The Hurricanes fly again—this time for Spitfire Productions' cameras as they re-create Britain's 'finest hour' on celluloid for what promises to be one of the biggest and best of film epics, *The Battle of Britain*. Due for its premiere, appropriately enough, on September 15, 1969, this star-studded film also 'stars' a mammoth collection of restored aircraft of the period or, more precisely, aircraft restored as nearly as possible to the 1940 period since many of the Spitfires used are late marks and most of the German Me 109s and He 111s involved are post-war Spanish derivatives of these types disguised to resemble their famous progenitors. With some spectacular air combat scenes and big efforts to ensure authenticity, this is definitely a film not to be missed by enthusiasts. This scene from the film gives an idea of what the film has in store as two Hurricanes from an RAF Polish squadron patrol over South East England; only the bogus codes give the game away and reveal that the picture is of recent origin and not dating from 1940. A big colour print of this picture is among a selection of scenes from the film now on sale to the public. More details on page 39 this month. An article on making the film appeared in our February 1969 issue. (Photograph courtesy Spitfire Productions)

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Fire engine via Hong Kong

IAN SCOTT USES AIRFIX PARTS TO CONVERT A TOY

THE model described here is the modern variant of the 1914 Dennis fire appliance. The actual appliance was built by Miles Bros Ltd on a Bedford chassis during 1957 for the City of Exeter Fire Brigade. The design of the extending 50 foot escape has remained practically unaltered during the past 60 years. Therefore the excellent Airfix replica will look equally at home on the modern appliance as it did on the early escape carrying appliances.

The Escape

The escape is assembled as per the Airfix kit instructions. The ladder portions may be painted to represent highly varnished wood. All wooden ladders used by the Fire Service are varnished, which enables the ladder to be visually inspected along with the usual strength tests.

The Bodywork

The body and chassis were obtained from a toy plastic fire engine, which is sold in this country in two forms. The cheaper form is a friction powered model, the other has a flashing blue light. Both are manufactured in Hong Kong by two companies, 'Woolbro', and the other is 'Lucky Toys'. They are available in Britain from many toy shops and chain stores.

Remove the base from the toy, by use of a knife to break the cement bond. Take care not to exert too much force, as this may cause the body to crack. Remove the rear portion, cutting to the rear of the vertical straps on the body. The cutting line is shown on the diagram. It is necessary to deepen the rear portion of the escape well. Cut along the bottom of the existing well, leaving the walls attached to the roof. Terminate the cutting at the change in width of the well and at this transition cut across to complete the operation.

Plastic sheet 20 thou thick is used for the following additions to the body. The new sides for the escape well may be made from a piece $3\frac{1}{2} \times 1\frac{1}{2}$ inch. Cut this diagonally to form the two sides. The base of the well is $3\frac{1}{8} \times 1$ inch. The rear is produced from a piece $2\frac{7}{8} \times 2\frac{1}{8}$ inch with a cut-out $1\frac{1}{2}$ inch wide \times $\frac{1}{8}$ inch deep on the $2\frac{7}{8}$ inch side. Cement this piece across the rear of the body with the cut-out to the top. Cement the well sides to the original sides flush with the roof. Cement the base between the sides ensuring that it mates at the front and end, with the original well base and cut-out on the rear respectively.

From $\frac{1}{8}$ inch sheet balsa cut two pieces $\frac{1}{8}$ inch \times $\frac{1}{8}$ inch. From the plastic sheet cut two of item 1 (see drawing). Cement these two parts to the balsa sheet to form the rear portions above the pump. Then cement this assembly to the rear panel, ensuring that the top surface is flush with the mating surface on the body. Carve the edge of the balsa flush with item 1, and apply some sanding sealer to fill the pores.

Cut from plastic card two of item 2 (see drawing). Then cut one rectangle $1\frac{1}{4} \times 1\frac{1}{2}$ inches for the top of pump compartment and a piece $1\frac{1}{4} \times \frac{1}{8}$ inches for the rear. Before cementing these together it will be necessary to remove a strip either side of width .020 inch and length $\frac{1}{8}$ inch on top of the pump compartment. Assemble these

pieces together, with the cut-outs on the top of the pump fitting against the vertical sides. Cement this assembly to the rear of the body with the verticals against the underside of the balsa.

At this stage the escape well and rear of appliance should be painted silver to represent the aluminium panelling.

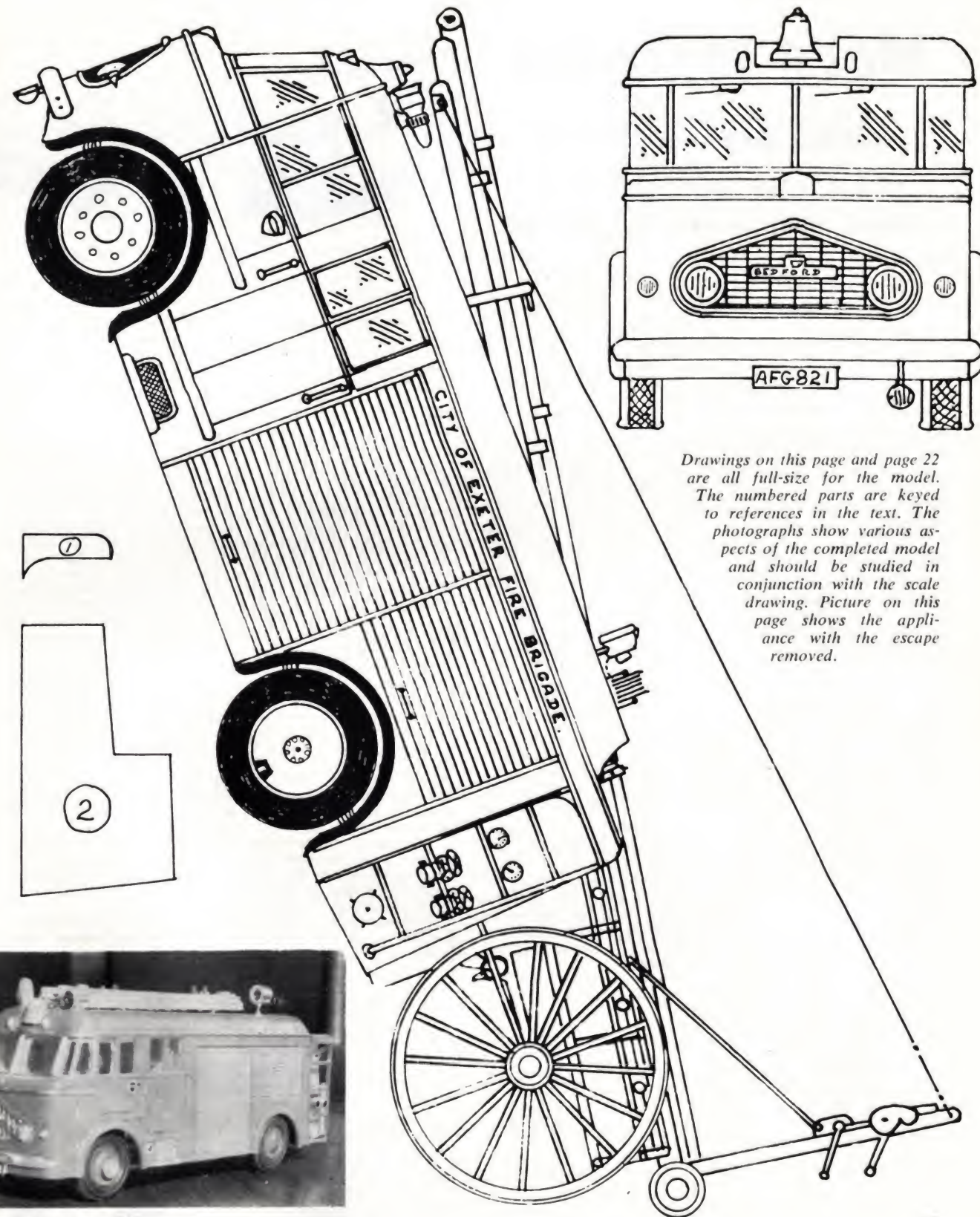
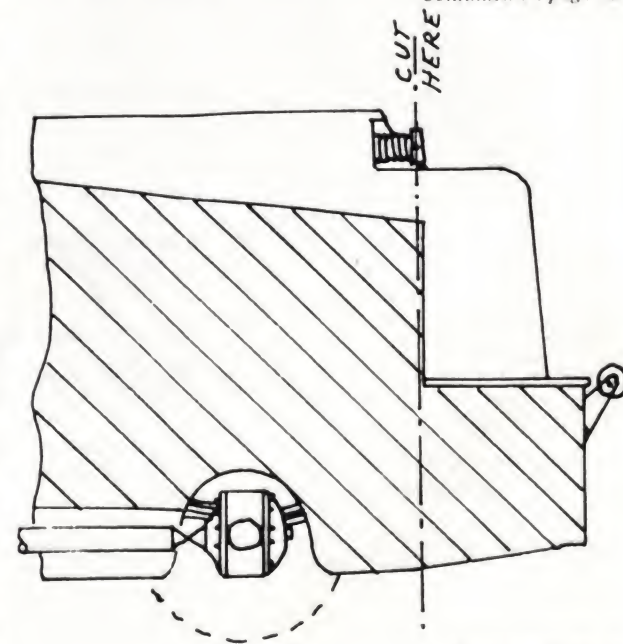
Detailing

The pump outlets were produced by cementing $\frac{3}{32}$ inch diameter \times $\frac{1}{8}$ inch long polythene tube to a piece of $\frac{3}{32} \times \frac{1}{8}$ inch plastic card. The plastic card is painted red and also half the length of the outlet, the remainder being painted silver. Handwheels may be produced from fuse wire and cemented to the outlets. Four pieces of fine card each of $\frac{3}{32}$ inch diameter are required to represent pressure gauge faces, two of each to be cemented above the pump outlets. The pump suction is produced from $\frac{1}{8}$ inch diameter \times $\frac{1}{8}$ inch long dowel to which is cemented a cap $\frac{3}{32}$ inch diameter \times $\frac{1}{8}$ inch thick. The suction is cemented to the bottom of the pump panel.

The access ladders to the roof of the appliance were made up from plastic cocktail sticks obtainable from most chain stores. Use the drawing as a pattern.

The escape carrying trunnions came from the Airfix fire engine

Continued on page 22



Drawings on this page and page 22 are all full-size for the model. The numbered parts are keyed to references in the text. The photographs show various aspects of the completed model and should be studied in conjunction with the scale drawing. Picture on this page shows the appliance with the escape removed.



More Matador conversions

TWO USEFUL AND ECONOMICAL LORRY MODELS BY D. L. WHITING

It is sometime since any conversions from the Airfix Matador kit appeared, but the subject is by no means exhausted and here are two more of interest to railway and roadway modellers.

We will deal first of all with the 8-wheeler, as this is by far the more complicated of the two. As with other Matador conversions previously published, this is of no particular prototype, merely a representation of a private operator 8-wheel drop-side lorry.

Commence construction by removing fuel tank, vacuum tank and winch, together with the towing hooks and springs at the chassis ends, so that it resembles the chassis in Fig 1 on the drawing.

Next step is to make two chassis extension pieces as shown in Fig 2. Cement these to the chassis, using a spliced joint as illustrated. Now cut and fit the rear axle platform from plastic card Fig 3. Make and fit new cross member Fig 4. Now fit front springs, kit parts 35 and 36, cab floor (or complete cab assembly if preferred). When dry, fit mudguards (kit parts 33 and 34) immediately behind front mudguards. Fit springs (kit parts 37 and 38) so that the centre-line of the axle lines up with the centre of mudguards. Then fit sump and gear-box (kit part 41). File the differential housing from the front axle, and cement the axle in place on front springs.

Repeat this operation with the second axle, kit part 43. Fit a disc of plastic card to each brake-drum to increase the track, and cement the axle to the springs. Make two axles for the rear wheels. These are 23 mm long and cut from plastic cocktail sticks or stretched sprue, being filed down at the ends to accept the wheels. Dummy springs may be fitted if desired, but as they are not really visible these may be omitted. Transmission part 45 is now fitted back-to-front, ie, with the box housing at the axle. Part 42 is then cut to fit between the rear axle and the third axle box. A little plastic putty is then shaped over the front box to complete it.

Fit the exhaust pipe part 46 to the silencer, part 47. Tail pipe is then softened by warming, and bent forward to straighten the middle part. Next shorten this tail pipe by 4 mm. The pipe will now project just in front of the rear mudguards when fitted. Mould the rear mudguards from plastic card or make from card and cement in position.

The wheels are the next item to be tackled. The method I used is similar to previous ones described in earlier issues of AIRFIX magazine, with a few slight differences. My method is to cut a plastic disc 13.5 mm in diameter. This is mounted on a 10 BA bolt with the kit wheel behind it, with the backs of tyre facing the drill chuck. A washer and nut holds everything together. Insert the bolt in the chuck of an electric or hand drill, and shape the wheels down to correct size, as indicated by the plastic disc, by holding a flat file against the tyre and using only a slight pressure.

If you are using an electric drill in a bench holder, as I did, you will find it takes a few seconds only to complete each wheel, and the finished tyre has tiny radial grooves, which simulate the tyre tread. After turning down to correct diameter, reduce the width of tyres by holding the file against the back of the wheel until it is about 4 mm thick. Now back to the chassis.

Shorten the fuel tank by cutting a 4 mm slice out of the centre and re-assembling. File the ends flat. File an angle on the ends of the supporting arms, so that the tank can be suspended below the chassis. The modified tank is mounted on the opposite side to its intended position, about 1 mm behind the front mudguard, with the large projection on the tank uppermost. This makes a most effective filler cap. Shorten the vacuum tank to 12 mm and mount at a later stage.

Now turn to the wheels, all 12 of them! Take four hubs and shape



Above: The two models described here pose side by side for comparison. The van or pantechnicon has its radiator altered to resemble an Atkinson or Leyland. The 8 wheel truck depicts a pre-war AEC, though both models are, strictly speaking, freelance.

a blob of Brussen stopping or plastic putty to represent the domed wheel centres. When dry, smooth with a rat-tail file. For the rear wheels I felt that the flat wheel centres left a lot to be desired on a civilian lorry, in fact, they just did not look right. My solution was to drill a $\frac{3}{32}$ inch hole in the centre of the disc, and then using a rat-tail file, I opened the centre not quite up to the rim. As only four are required, you will have four spares to practice on. Cement 4 pairs of wheels together, and leave to dry.

With the wheel centre painted matt black and the coloured rim in place, together with the hub-cap touched-in in silver, the effect is most realistic. The hub-caps are small pieces of plastic rod, cemented direct to the wheel centre. This completes the chassis, except for a coat of matt black or grey paint. When the paint has dried, cement the wheels to the axles. If you have not already done so, assemble the cab as per kit instructions except for the roof. Before I assembled the cab, I removed the window frame from in front of the mate's seat, as I do not recall a civil AEC with both windcreens capable of being opened. Cut out the window in rear of cab and if windows are to be glazed, this should be done before cab is assembled. Fit the new roof of plastic card, and when dry, shape to final outline, and radius all edges. A dummy ventilator is made from card and cemented to the centre of the roof.

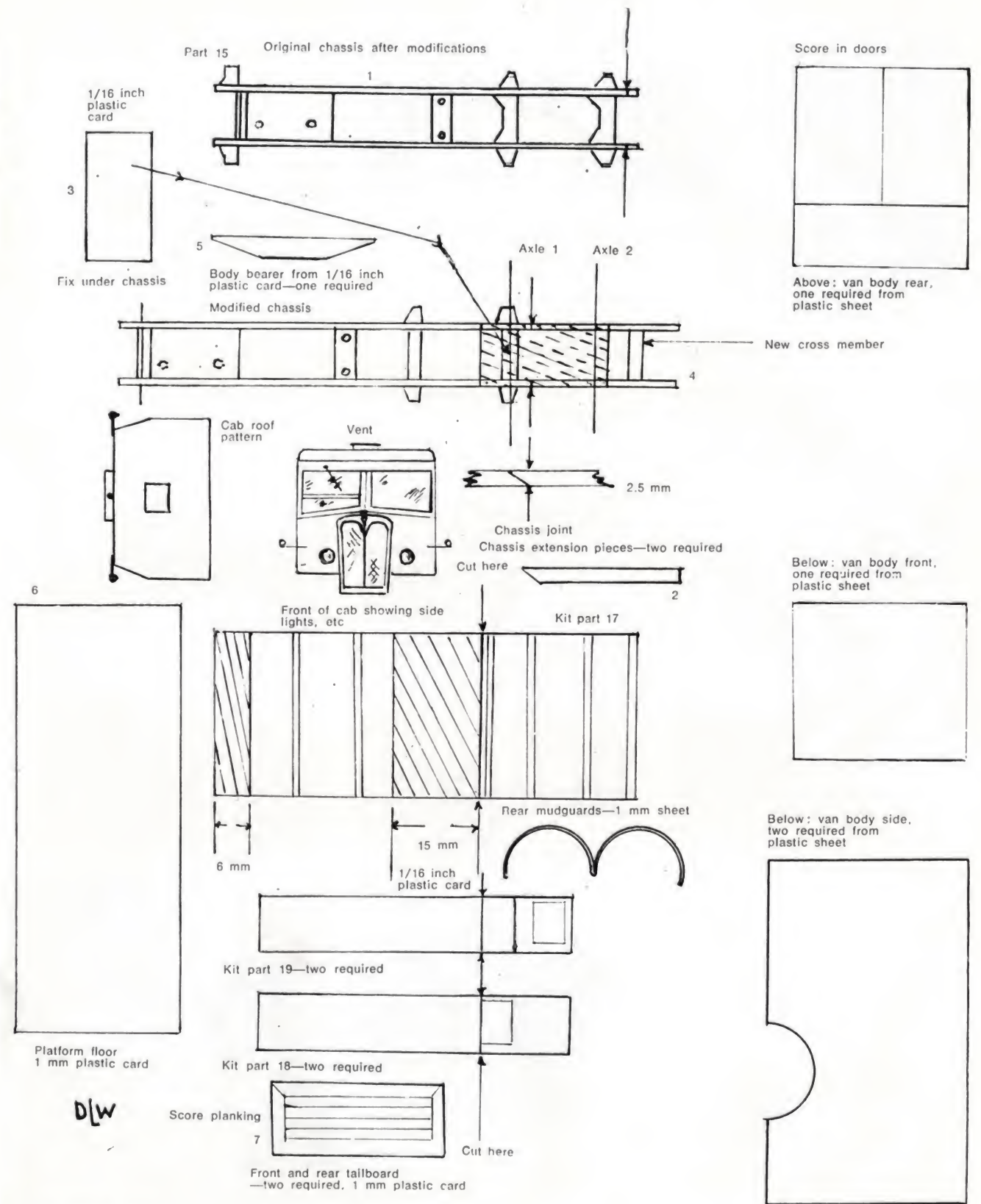
Now to the body work. Make the new body bearer as drawing (5). Next take the kit platform (part 17), and cut as indicated, and extend with plastic card. Fit a new bearer approximately 10 mm from the existing bearer on the platform. File the edges of the platform flat. Cut a new floor (6) and cement to the top of the extended platform. Fit the vacuum tank to bearers opposite to fuel tank. Cut the body sides (kit parts 18 and 19) as shown, and cement to the sides of the platform. Four are required. Make and fit the front and tail boards (7). Cut two pieces of 1 mm plastic card 80 mm long x 3 mm deep. Cement these under the sides to represent the platform edges. The final details are now added.

Two pieces of stretched sprue or wire 5 mm long are cemented to the front of the cab where shown. The small side lamps are then cemented to the outer ends. Make the headlamps from plastic rod and cement in place. Make and fit number plates and, for one final detail add two protecting bars over the rear window.

Colour scheme is of course to one's own taste. My own model is gloss yellow, with gloss black mudguards, fuel and vacuum tanks and cab roof. Wheel centres on the front wheels and the rims on rear wheels are yellow. Radiator shell is silver, with matt black grill.

Continued on page 22

Below: A closer view of the van model. Drawings for the bodywork appear on the far right of the opposite page.



Score in doors

Above: van body rear, one required from plastic sheet

Below: van body front, one required from plastic sheet

Below: van body side, two required from plastic sheet

Platform floor 1 mm plastic card

DLW

Score planking

Front and rear tailboard—two required, 1 mm plastic card



The British Army '14-18

UNIFORMS AND REGIMENTS
DESCRIBED
BY DAVID NASH

Part 3: Mounted Troops

THE British Army of the Great War contained 31 regiments of regular cavalry, 54 of Yeomanry and three of Horse. Many of the regular regiments went to France in 1914 with the original British Expeditionary Force and did very useful work in the first weeks of the war. But thereafter, when static trench warfare had set in, they were of only minor significance. Several times complete divisions of cavalry were deployed in the rear of an offensive waiting for the expected breakthrough which never came.

Only briefly in 1917, during the German retreat to the Hindenburg line, and again during the last few weeks of hostilities, did mounted troops play any part in operations. An exception to the above statement, an incident which shows that cavalry had uses other than those prescribed, was the stand of the King Edward's Horse in April, 1918, during the Battle of the Lys. The KEH were the only mobile troops on hand to plug a gap several miles wide, made when two Portuguese divisions broke before a German attack. The regiment was rushed in and fought a dismounted holding action in which they held two Bavarian infantry divisions for the best part of

Below: Standard Army cycle showing equipment for cyclist battalion trooper. Note rifle position. **Right:** Trooper of cyclist battalion in full equipment.

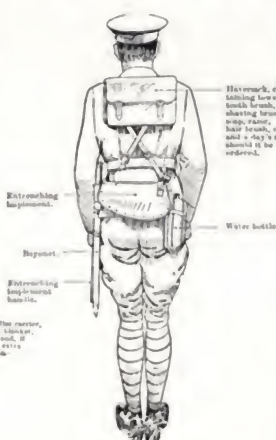
a day, allowing fresh troops to build a new line to their rear.

In 1917, many of the Yeomanry regiments were dismounted and formed into the 74th (Yeomanry) Division, serving for the rest of the war as infantry. Appropriately enough, the divisional badge was a broken spur.

The last great cavalry actions were fought in the Middle East where Allenby's mounted troops were boldly handled and achieved spectacular results against the Turks. Much to the dismay of regular cavalry officers, these last great cavalry victories were achieved entirely without their aid, the troops involved being Yeomanry, Australian Light Horse and Indian Imperial Service cavalry.

The regular regiments were divided up as follows:

GUARDS	Horse Guards and 1st and 2nd Life Guards
DRAGOON GUARDS	Regiments 1-7
DRAGOONS	Regiments 1, 2 and 6
HUSSARS	Regiments 3, 4, 7, 8, 10, 11, 13, 14, 15, 18, 19 and 20
LANCERS	Regiments 5, 9, 12, 16, 17 and 21



The uniform was similar to that of the infantry as described in July's issue of AIRFIX magazine. The cap, cap comforter and tunic were identical, but instead of trousers the cavalry wore leather reinforced riding breeches with ankle boots, puttees and spurs. It is interesting to note that cavalry puttees were wound from knee to ankle, the reverse of the infantry method, to prevent fraying the tying tapes against the saddle.

The buttons for all regiments were gilding die struck and regimental badges were worn on the cap and collars. Generally speaking, all regiments had titles on the shoulder straps. A feature of cavalry dress which does not seem to have been worn by the infantry was a waterproof neck cloth attached to the back of the cap and hanging down over the collar. Officers conformed to the above rules but wore knee boots and an open-necked tunic with collar and tie.

The equipment was different from that worn by the infantry. Over the left shoulder was slung a bandolier containing rifle ammunition; on the left hip, hung from the right shoulder, was a haversack. This was counter-balanced by the water bottle on the opposite side. Waist belts do not seem to have been in use in 1914 but were in use by some regiments in 1917.

The cavalryman's weapons were the .303 SMLE rifle and a sword. Both these items were suspended from the horse, together with a forage bag, a canvas bucket for watering the horse, a blanket roll, mess tins and the saddlery and harness. It was customary practice to carry an extra bandolier of rifle ammunition around the horse's neck. In addition to the above, the lancer regiments carried a lance without pennant.



Above: Front and rear views of lancer and cavalry trooper converted from US Cavalry and Civil War Artillery figures and horses as described in text.

The evolution of cavalry dress and equipment follows the general guide line set down for the infantry in last month's AIRFIX magazine. By 1918 we find the cavalry carrying a gas mask on the chest, a small pack on the back and all were equipped with steel helmets.

Most of the cavalry was formed into independent cavalry divisions, but each Army Corps generally had one regiment attached to it as scouts, escorts, couriers and auxiliaries to the military police. The cavalry divisions, apart from their supporting arms, contained three brigades, each of three regiments, a battery of Royal Horse Artillery and a signals troop. Later in the war a cavalry machine gun squadron was added. Each regiment was formed from a Machine Gun section and three squadrons, each of four troops. The troops consisted of three or four sections of from four to eight men under the control of an NCO or a selected soldier.

Both regular and territorial regiments were trained to fight on foot as well as on horse, but there was a clear distinction between the role of the two. The regulars were envisaged as pure cavalry and as such were well schooled in the use of sword and lance in mounted action. The Yeomanry, however, were seen as mounted infantry and were trained even in the use of the bayonet, an item which was not even carried by the regulars.

Just how vulnerable mounted men were to machine gun and rifle fire can be judged by the chart below which shows the regulation paces:

Pace	Distance Covered in One Hour	Distance Covered in One Minute	Time Taken to Cover 1 Mile
WALK	4 miles	117 yards	3' 45"
TROT	8 miles	235 yards	1' 52"
GALLOP	15 miles	440 yards	1' 0"

Bear in mind the large size of the target, its inability to reduce this size and an effective small arms range of at least 800 yards.

The other 'mounted' troops of the army were the cyclist battalions. They originated in the Territorial Force in September, 1969

pre-war days. To form the units in existence in 1914, the cyclist sections from the TF infantry were combined to make 14 battalions. These units were intended for home service as a mobile reserve to guard against an invasion, a threat which was taken very seriously at the time. Ten of these units were numbered battalions of line regiments, the other four, the Kent, Highland, Huntingdonshire and Northern, being independent. The cyclists were regarded as a success and an Army Cyclist Corps was formed to provide battalions for service in France. There troops either replaced or augmented the cavalry and battalions were attached to most of the Army Corps, taking as their designation the Corps number.

The cyclists had a rather loose organisation. The company was the tactical unit and consisted of two or more platoons each of four sections. The battalions were formed from a Headquarters, a machine gun section and two or more companies.



Above: Cavalry scout, 1914. Note bandolier on horse's neck. **Opposite page:** British cavalry in 1918 (Imperial War Museum).

The uniform was that of the line infantry with appropriate cap badges and shoulder titles. The equipment was distributed as follows: on the rider a small pack, old style black leather ammunition pouches, water bottle, entrenching tool, bayonet and mess tin (after 1917) in a webbing case carried in the small of the back. On the front of the cycle was a rolled greatcoat in a ground sheet, on the rear a valise containing blankets, etc. and additional ammunition with a waterproof cape strapped on top. The rifle was carried on the off side in metal clips, butt to the rear. Armament was the .303 rifle, officers carrying a pistol or revolver. Needless to say, the sword was never part of a cyclist's equipment.

Modelling British cavalry of 1914-18 represents more of a problem than the infantry since there is no readily available set to work on. Use can, it's true, be made of the horses and gunners from the Horse Artillery set, but otherwise the Airfix US Cavalry or Civil War Artillery sets must be used. If you've done any small scale figure converting before, you'll find it a simple matter to adapt the US Cavalry torso by shaving down the boots to depict puttees, shaving the blouse detail off to leave a plain tunic, then adding the bandolier from a paper or Chart-Pak strip and packs, etc. from rectangles of card or plastic card. Remove the US Cavalry head and add either an 8th Army or 1914 British head as required. Then add horse furniture, and a sword from a short pin. Finally add a wire lance, 40 mm long, or a rifle as required. The pictures show examples of what can be done.

For cyclists, one idea is to modify a marching 1914 soldier with a Merit 4 mm scale cycle arranged as though he is pushing it. The obvious alternative is to use the cyclist from the French infantry set with his head replaced by a British one. The greatcoat can then be painted to depict a waterproof cape.

NEW BOOKS

REVIEWED FOR MODELLERS

Model soldiers and . . .

HOW TO GO COLLECTING MODEL SOLDIERS, by Henry Harris. Published by Patrick Stephens Ltd, 9 Ely Place, London EC1. Price 35s.

UNIFORM with *How To Go Plastic Modelling*, this companion volume, which is by a well-known collector of model soldiers, is a most comprehensive book which will be of great help to anyone who already has an interest in the subject or who wishes to start in the model soldier hobby. With the emphasis very much on the 'collecting' side, the author deals with the different arms such as infantry, cavalry, artillery, and so on each in a separate chapter. An enormous amount is packed into the book, for not only is the model aspect covered in detail, but there is also a 'potted' history of each arm concerned. All the model ranges and sources of supply are covered in detail, and there are scores of useful tips on utilising even the cheapest plastic toys to turn them into collectors' pieces by some craft conversion work. Most of the ideas in the book are based very closely on Major Harris's own large collection, and his method of building up his collection over the years is cited frequently in the examples given. All scales are covered, but obviously emphasis is on the OO/HO and 54 mm size figures popular with most modellers. Hints and tips for conversions and painting are, of course, included, and there is also a chapter on wargaming by Donald Featherstone. The book is lavishly illustrated with more than 70 big photos, and there are also numerous drawings in the text. Summing up, a very absorbing and helpful book which ought to aid existing model soldier fans greatly as well as encouraging a lot of newcomers.

. . . uniforms

WORLD UNIFORMS IN COLOUR: Volume 2. Published by Patrick Stephens Ltd, 9 Ely Place, London EC1. Price 30s.

THE first volume of this series was published a year ago. The companion volume now ready covers all the nations not included in the first volume, and in our opinion is the more interesting of the two. This is probably because it brings to light nations and regiments less well-known to European readers. For instance, the new volume includes all the South American and African nations (among others) which reveals the big pre-1914 German influence still existing in some of the South American armies where the dress uniforms are still those of the Kaiser's army, as are the drill movements (complete with 'goose-steps') and the musical instruments (with 'Jingling Johnnies'). In Africa, India, and Pakistan the influence tends to remain British as far as uniforms and drill are concerned with numerous uniforms and regiments remaining (usually in a new form) from the days of the British Empire. Central and North American countries, Australasia, Malaysia, and Pacific countries are the others covered in this new volume. As before, there is colour on every page, splendidly accurate drawings, badges, emblems, and unit histories all in similar style to the presentation in the first volume. For model soldier collectors looking for uniform references and conversion ideas, this book, (as indeed Volume 1) offers a great deal of material which will be quite new to most enthusiasts.

For ship lovers

SHIPS 'SEVENTY, Edited by David Parsons. Price 15s.

GERMAN WARSHIPS OF WORLD WAR I, by John C. Taylor. Price 30s.

Both published by Ian Allan Ltd, Terminal House, Shepperton, Middx.

FIRST of these two books is the annual Ian Allan offering aimed at the younger enthusiast. In about 100 pages, there are a dozen sections each dealing with some particular shipping subject. Of these,

there are particularly interesting pieces on gas turbine propulsion in the Royal Navy, ocean tugs, and shipping on the Isle of Wight ferry route over the years. With plenty of big clear pictures, this is a good read for shipping fans.

The second book is an addition to the excellent Ian Allan series of warship reference books. The format follows the usual style and the book is packed with data, lists, pictures, specifications, etc. All ships used by the German Navy in 1914-18 are covered by class, with launching dates, etc, and a note of each ship's eventual fate. This book should not be missed by anyone with the other volumes in the series.

For rail fans

LIGHT RAILWAY TIMETABLES & GUIDE 1969, edited by Geoffrey Body. Published by David & Charles Ltd, South Devon House, Newton Abbot, Devon. Price 2s 6d.

A MUST for railfans out and about in pursuit of their hobby. A welcome addition this year is the Dart Valley Railway timetable. All 'light' railways (mostly preserved) are included with useful detail on companies and stock, etc.

RAILWAY ENTHUSIASTS' HANDBOOK 1969-70, edited by Geoffrey Body. Published by David & Charles Ltd, South Devon House, Newton Abbot, Devon. Price 25s.

THE first edition in 1968 was so popular, this Handbook is now to be produced annually. Activities on the amateur railway scene are coming so thick and fast this is perhaps as well. The 160 pages are full of up-to-date information and photographs. We liked particularly the chapters on Continental railways and the brave attempt to list some of the 600 or so public and privately preserved locomotives.

Coach drawings

HISTORIC CARRIAGE DRAWINGS IN 4 MM SCALE, by David Jenkinson and Nick Campling. Published by Ian Allan Ltd, Terminal House, Shepperton, Middx. Price 50s.

THIS is an absolutely splendid production and fantastic value for money. The 100 pages of drawings divide equally between LMS and LNER with a nice balance struck between pre- and post-grouping designs and the whole lot has been compiled with modellers in mind. Therefore there are sections on coach liveries, coach numbering, detail drawings of standard underframes, coach ends, etc, and inset between each pair of drawings there are separate pages giving prototype notes. These drawings are of tremendous value to the keen railway modeller who will regard 50s a small price to pay for such a wealth of information.

Garratts

THE GARRATT LOCOMOTIVE, by A. E. Durrant. Published by David & Charles Ltd, South Devon House, Newton Abbot, Devon. Price 50s.

PRODUCED in the large page format of the David & Charles Locomotive Monograph series this 144 page book covers the whole story of the Garratt locomotive from the first engine built for Tasmania in 1909 (one of which has been purchased by the Festiniog Railway) to the spectacular engines still in service in Africa and elsewhere today. There is a useful review which sorts out all the different types of articulated locomotives, a chapter describing the Garratt principle, and a series of chapters describing Continent by Continent all the Garratts that have operated or are still operating throughout the world. The illustrations are particularly noteworthy since many of the photographs are fine action shots taken by the author. There are several diagrams and many useful summary tables.

Loco building

BUILDING MODEL LOCOMOTIVES, by F. J. Roche and G. G. Templer, edited by S. W. Stevens-Stratten. Published by Ian Allan Ltd, Terminal House, Shepperton, Middx. Price 30s.

THIS is a revised and edited edition of an excellent series of articles that appeared in the *Model Railway Constructor* between 1947 and 1951. The late F. J. Roche's skill in model locomotive building cannot be disputed and there is much here that is of value to modellers, but the publishers are to be congratulated on including Colonel Templer's criticisms which we think are valid since Mr Roche's ideas were peculiarly his own and are likely to trap the un-

Continued on page 39

AIRFIX magazine

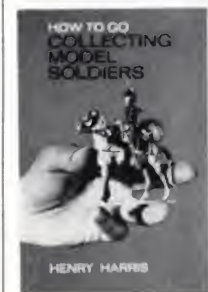
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BOOKS FOR MODELLERS

HOW TO GO COLLECTING MODEL SOLDIERS

By Henry Harris

Third in the popular 'How To Go' series



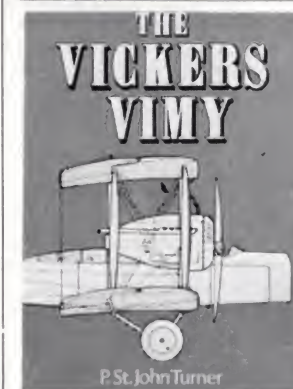
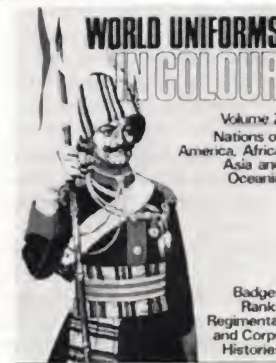
The definitive work on how to make the most of your collection. Henry Harris, an acknowledged military expert, explains all aspects of this absorbing hobby and provides a wealth of information on the subject for the absolute beginner, at the same time offering scores of new ideas and valuable hints for the model soldier enthusiast of long standing. In this, the third in the popular 'How To Go' series of books, the author covers choice of scales, displaying models, developing 'themes', and conversion ideas as well as surveying the history of the different arms—artillery, cavalry, armour, etc. In addition he gives advice on how to plan a model army from first principles and how to amass the men and materials for a serious collection. There are more than 70 superb photographs and an interesting chapter on wargames by Donald Featherstone which will appeal to every keen collector. As well as a foreword by Brigadier Peter Young, there are eight instructive and fact-packed appendices featuring lists of manufacturers, societies, abbreviations and museums. 200 pages, 8½" x 5½", case bound. (35s net)



WORLD UNIFORMS IN COLOUR

Two volumes

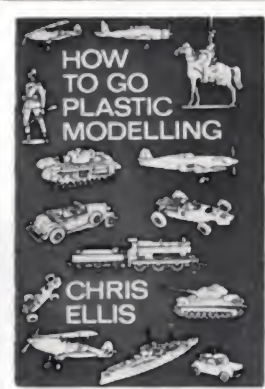
Two superb colour books of interest to all military enthusiasts, modellers and model soldier collectors, describing and illustrating the uniforms, badges and ranks of present-day units throughout the world, with regiment and corps histories. Measuring 12½" x 9½", each volume has more than 150 illustrations, all of them in full colour, with a four-colour laminated board cover. Volume 1 (published in November 1968) features the European Nations, Volume 2 (to be published on September 2) covers America, Africa, Asia and Oceania. (30s net each)



THE VICKERS VIMY

By P. St John Turner

A comprehensive work on the Vickers FB27 'Vimy', including details of the building of VFA's replica. Over 80 illustrations, many never before published, 8 pages of scale drawings and plans, plus appendices giving performances, weights, dimensions, etc, of main versions. 128 pages on art paper, 8½" x 5½", case bound, with laminated jacket. (30s net) Also available: collectors' special commemorative first edition, limited to 500 numbered copies, luxuriously bound in hide and linen. (84s net)



HOW TO GO PLASTIC MODELLING

By Chris Ellis

Editor of AIRFIX Magazine

An essential and comprehensive guide to plastic modelling. Ten chapters covering such topics as: basic assembly, detailing, converting, modelling materials, tools, painting, transfers, markings, research, display, maintenance and scenic settings. 176 pages 8½" by 5½", 80,000 words, 79 pictures, 7 pages of scale drawings, numerous sketches in the text. (25s net)

COMING ON
OCTOBER 9!

fighting colours

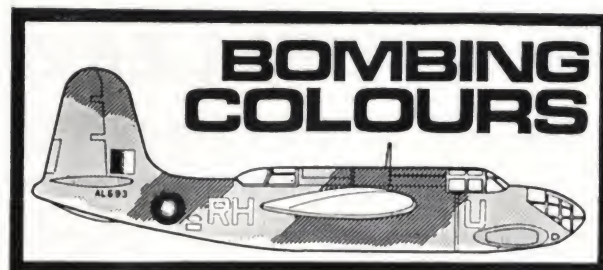
By Michael J. F. Bowyer

Vital to all aircraft and modelling enthusiasts, this reference work details developments and changes in RAF fighter camouflage, 1937-69. Appendices give full list of WW2 serials, plus sqdn and unit codes. 192 pages, 8½" x 5½", 157 photos, 139 drawings. (35s net)

How to order

PSL books are published by Patrick Stephens Ltd, 9 Ely Place, London EC1 (Tel: 01-405 2297). Use this order coupon to obtain your copies - post it to PSL or hand it to your bookseller or model shop. (Send for free descriptive leaflets if not convinced!) If you prefer not to cut your magazine, order on a piece of notepaper.

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Part 6: Wartime Bombers in Post-war Service

OF some 20 different designs for twin-engined bombers in 1917-1918, only two reached production status, the DH 10 Amiens and Vickers FB 27 Vimy; and while examples of both reached the Western Front in late 1918, neither type actually went on operations during the first world war. Large numbers of both types were surplus to requirements and plans to equip some Independent Air Force Squadrons with DH 10s, and coastal patrol squadrons, commencing with No 274, with Vimys, were abandoned.

Contracts for over a thousand of each type were cancelled but well over a hundred of each had been fully erected when the cancellations were later effected. Placed in store, they were withdrawn in the immediate post-war years for squadron service. Their colours, therefore, were initially to the standards of 1918 and subsequently subject to the changes that came with a return to peacetime conditions.

These two types show a new trend in bombing colours—from the end of World War I, colouring was apt to vary according to period of service, and to place of service.

From Khaki to Silver

Stocks of the AMA dopes became exhausted in 1923 and from this time new finishes were applied. These were APD

Below: E5507 survived to the days of an overall 'silver' finish with its serial repainted in standard styling (G. S. Leslie/J. M. Bruce collection)



MODEL AIRCRAFT RALLY

The 1969 Woodford Model Aircraft Rally will be held on Sunday, August 31, at Woodford Aerodrome, Bramhall, Cheshire, from 10 am to 6 pm by courtesy of Hawker Siddeley Ltd. It includes a display of radio controlled models performing aerobatics and free flight gliders and rubber driven models. Entry to the airfield is 3s 6d, children free. Car parking is free and refreshments will be available.



Standard finish of newly-built DH 10s, in khaki-brown fabric with battleship grey ply at both ends of fuselage, is shown by port and starboard views of E5557, a DH 10C (Rolls-Royce Eagle engines). The marking of the serial on the red and white stripes only of the rudder, is an exclusive characteristic of aircraft built by the Aircraft Manufacturing Company (G. S. Leslie/J. M. Bruce collection).

and APDT for home and overseas use respectively; the A for aluminium, PD for pigmented dope and T for tropical. These finishes bestowed the so-called 'silver' finish of RAF aircraft between the wars. The effect of the tropical finish was the same as the home scheme, but the dope had different properties. This change showed a new philosophy in tropical finishes; hitherto the idea was to increase pigmentation to stop penetration of harmful sunrays, now it was to reflect, one might say deflect, these rays. And it looked good.

First of the bombers to be affected by the new finishes were the DH 10 at the end of its service, and the Vimy at the start of its active service after, in many cases, several years in store. Both types were produced in several versions on which there is no straightforward serial marking guide, and these technical differences are therefore outside the scope of this review of their colouring and markings.

DH 10 Amiens

Ordered originally in late 1917 as a long-distance fighter for bombing escort work, the DH 10 was finally ordered as a bomber in its Mk III version in early 1918.

Following the constructional methods employed by the Aircraft Manufacturing Company on the DH 4 and DH 9, the fuselage had plywood covering forward and fabric to the rear, except the extreme rear, so that, as with its predecessors, there were areas of battleship grey and khaki for wood and fabric surfaces respectively. On the other hand, the wood on some was painted khaki to match the pigmented dope of the fabric.

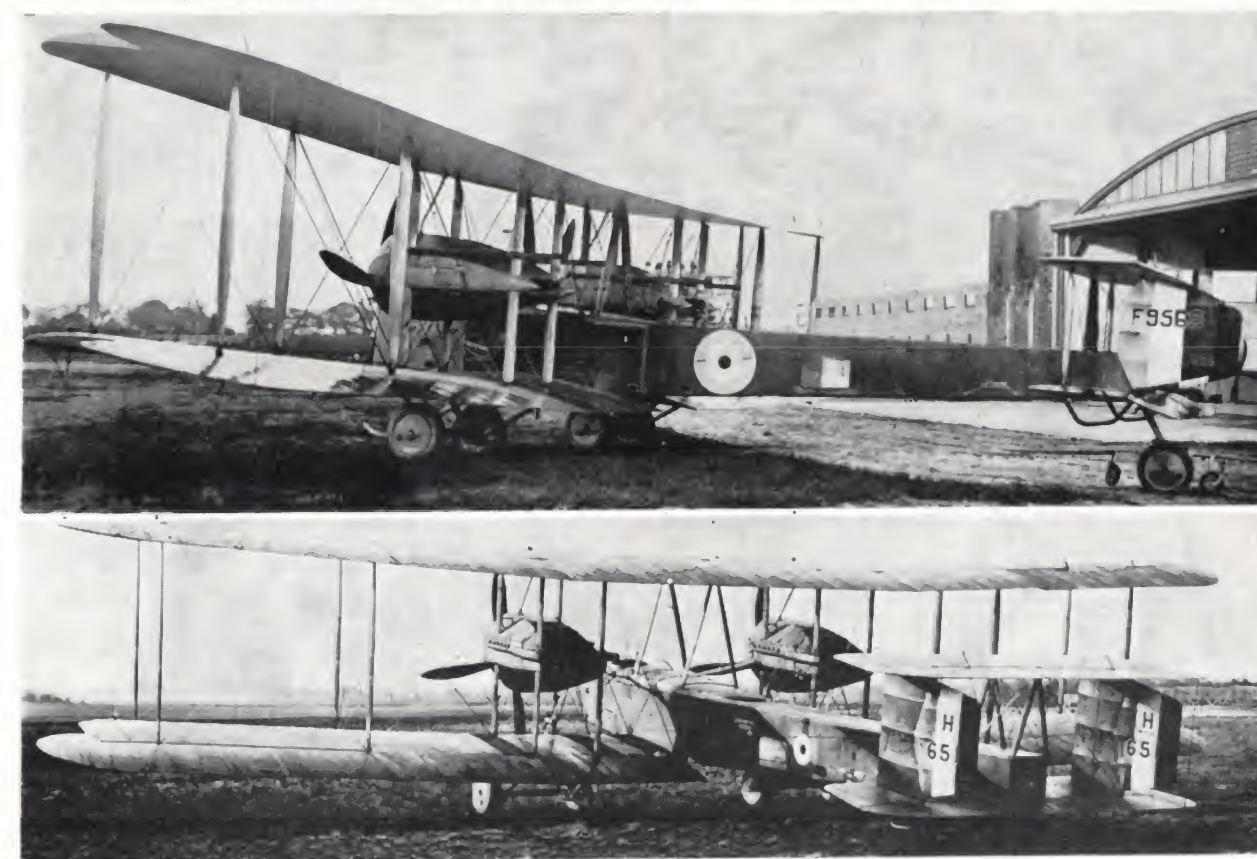
Early production models had a khaki PC10 doping finish with plain undersurfaces and late production aircraft had khaki AMAPD overall (see Part 5, August 1969). The DH 10 entered squadron service post-war with No 97 Squadron in India and No 216 Squadron in Egypt; the former squadron was re-numbered No 60 on April 1, 1920. Additionally, two DH 10s were attached to No 27 Squadron in December 1922

for frontier operations. The aircraft used in these squadrons were shipped out, re-erected at depots, and given an AMAPDT reddish brown pigmented dope overall and plywood areas were painted to match. Only No 216 Squadron's DH 10s appear to have been embellished. These had court card symbols on a white rectangular field each side of the nose.

A characteristic of initial DH 10 markings was the particular manufacturers' styles; small batches emerged from each of the various contractors and those from the Aircraft Manufacturing Company and Mann, Egerton, followed stylings set with earlier DH designs as illustrated in earlier parts. The manufacturers were as tabled below. Late in service, four DH 10s survived to take on the new 'silver' finishes described for the Vimy.

Serial Nos	Constructor	Remarks
C4283	Aircraft Manufacturing Company	Fourth prototype
C8658-8660	Aircraft Manufacturing Company	First prototypes
E5437-5636	Aircraft Manufacturing Company	Majority completed
E6037-6136	Birmingham Carriage Company	6+ built
E7837-7986	Siddeley-Deasy Motor Car Co	20 approximately built
E9059-9206	Daimler Company	35 approximately built
F351-550	National Aircraft Factory No. 2	First few only completed
F1867-1882	Aircraft Manufacturing Company	Built
F7147-7346	Alliance Aeroplane Company	Possibly none completed
F8421-8495	Mann, Egerton & Company	20+ built
H2746-2945	Aircraft Manufacturing Company	No record of building

Below: F9569, the replacement prototype Vimy in PC10 finish. This machine, flown from Joyce Green to Martlesham Heath for tests precisely one month before the Armistice, was the only Vimy to reach the Western Front before the war ended. **Bottom:** H651, a Vimy IV (note added fins). One of this batch, H651, in early 1920 at Farnborough was in Nivo finish with the red and blue roundels that became standard for post-war night bombers.



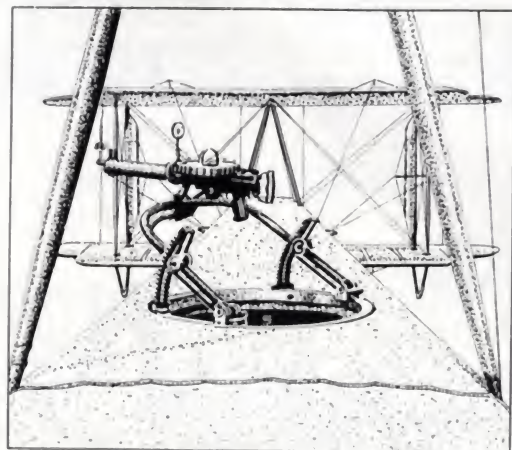
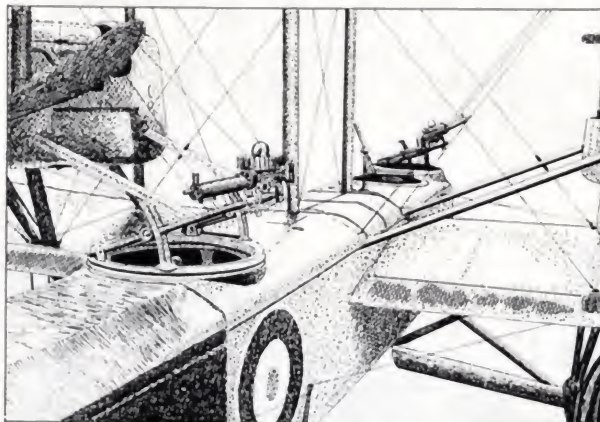
September, 1969

Bombing Colours—continued

emerged from five different plants; then the small post-war batches, totalling 30. These 30 were insufficient to equip squadrons and schools in the early 'twenties and were supplemented by reconditioned earlier aircraft. Such aircraft rebuilt in the Middle East had this clearly indicated on the aircraft—an R was added to the index letter of the serial number. Thus, on reconditioning which amounted to rebuilding, F3185 became FR3185 and H5089 became HR5089. In all, 38 were reconditioned.

Serial Nos	Constructor	Remarks
B9952-9954	Vickers Ltd (Bexley)	Prototypes
E9757-9856	Metropolitan Carriage Company	Cancelled
F701-850	Vickers Ltd (Crayford)	12 only built
F2915-2944	Royal Aircraft Factory	Renumbered in H651+ batch
F2996-3095	Clayton & Shuttleworth	Cancelled
F3146-3195	Morgan & Company	Majority delivered
F8596-8645	Vickers Ltd (Weybridge)	Majority delivered
F9146-9295	Vickers Ltd	50 delivered
F9569-9570	Vickers Ltd (Bexley)	Replaced B9952 and B9954
H651-670	Royal Aircraft Factory	20 delivered
H4046-4195	Boulton & Paul Ltd	Cancelled
H4725-4824	Metropolitan Wagon Company	Cancelled
H5056-5139	Westland Aircraft Works	25 built
H9413-9512	Ransomes, Sims & Jeffries	Cancelled
H9963	Vickers Ltd	Built
J251-300	Clayton & Shuttleworth	Cancelled
J1941-1990	Morgan & Company	Cancelled
J7238-7247	Vickers Ltd	All built
J7440-7454	Vickers Ltd	All built
J7701-7705	Vickers Ltd	All built

NB: From J7238 delivered in silver finish. All previous initially delivered in khaki schemes.



Drawings show: (1) Detail view of a Liberty-engine DH 10A. (2 and 3) Fore and aft views of a service Vickers Vimy in 1918 showing gun-rig detail.

Drawings by A. M. Alderson



Above: Vimy H653 in 'silver' finish with No 216 Squadron, Heliopolis, in the 'twenties (MoD photo).

Transatlantic Vimy

The description of the colouring of the Vimy used by Alcock and Brown in their epic non-stop flight across the Atlantic is quite simple—neutral colour, no markings. The explanation is rather longer. There are those who, having visited the Science Museum, pontificate on the colour which they have seen for themselves—perhaps forgetting that in 50 years considerable re-painting has been necessary to keep the exhibit in a spruce condition.

Brown himself described the colour as grey. Photo tones show it must have been a light grey. This was probably the colour of the fabric itself which tended to become greyer for bombers as the war progressed, as the best quality Irish linen was not produced in sufficient quantities to meet the demands of such wide spreads. It was logical to use a clear dope since it was lighter than a pigmented dope—and weight was an important factor in view of the heavy fuel load.

Although Brown was still a serving officer, it was not an official RAF flight but a Vickers entry for the prize for the first crossing. Thus, RAF roundels or serial numbers were not applicable. It was technically a civil aircraft, but had been shipped to Newfoundland before the 1919 Air Navigation Directions regulating civil aviation were promulgated and therefore was not given a civil registration.

Bruce Robertson



3

AIRFIX magazine

T48 GMC

THE T48 Gun Motor Carriage was a version of the standard US half-track developed to meet Anglo-American requirements for a self-propelled anti-tank vehicle mounting the 6 pdr gun. American interest in the T48 lapsed at an early date and the T48s were supplied to Britain only. However, few if any were actually used in combat, and the British Army either converted them back to ordinary half-tracks (by removal of the gun) or sent them on as Lend-Lease equipment to Russia where many were used in action by the Red Army. Thus this model makes a nice addition to miniature Soviet Army equipment.

Basically the complete M3 Half-track is assembled following the kit instructions but omitting the machine gun pulpit and the external storage racks which were not fitted to the T48. The crew seats in the rear compartment and the fuel tanks are also omitted and consigned to your 'spares' box. The only structural change concerns the main bulkhead behind the driving compartment; this must be sawn off horizontally immediately above the top of the centre seat back which is moulded on the part. The altered bulkhead is then assembled in its usual position. Next, with a small file or a craft knife, cut a 2 mm deep V notch in the centre top of the armoured windscreens plate.

Next task is to make up new fuel tanks in each rear corner, with an ammunition locker between them, arranged as shown in the pictures and sketch. This assembly is 7 mm deep from front to back with the two fuel tanks built up on the outer ledges of the fighting compartment floor so that the tops are 1 mm below the top edge of the compartment. Use 20 thou plastic card, taking your measurements from the model and building up each tank face-by-face. The



Above: Useful detail view of the full-size T48 shows full stowage.

ammunition locker is then simply cemented in the remaining space but with the top 2 mm below the upper edge. The rear door remained, incidentally, as a means of loading the ammunition into the vehicle. Two stowage lockers were mounted externally at the rear each side of the door and in model form these measure 7 mm (deep) x 4 mm (wide) x 3 mm. I used suitable scrap plastic here cut to size.

For the gun simply use the 6 pdr left over from the recent Light Tank Mk IV conversion. Cut off the counter-weight from the muzzle and assemble the shield, trunnions, and cradle (with wheel axles removed) in the normal way. Before cementing the shield in

place to hold 6 pdr gun. Below: Model under construction showing 1916 tank gun mount in place to hold 6 pdr gun. Bottom: Completed model ready for painting. Note how original 6 pdr shield is incorporated.

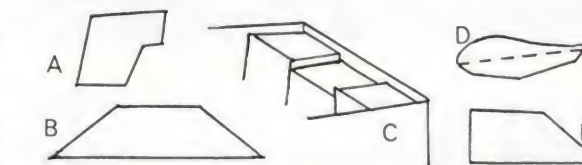
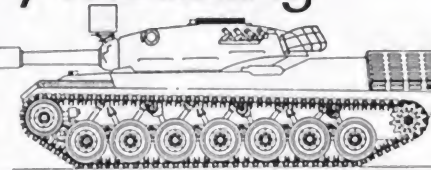


Right: Completed model in Russian markings with crewman from Airfix Russian Infantry. Almarks transfers are used here.



Military Modelling

by
Chris
Ellis



Parts for T48 conversion. (A) Gun shield outer plates. (B) Gun shield top. (C) Ammunition locker and fuel tank arrangement—not to scale. Bren Carrier parts; (D) New dustguards. (E) Rear compartment sides.

place, file all the detail from the outer faces and cut half through the two angle corners of the outer 'wings' so that they can be bent to a slightly different angle. Then cut out two new outer plates from 20 thou plastic card (see drawing A) and cement these over the existing plates (which are smaller). Next cut out an upper plate (drawing B) and cement this across the top of the front shield, bending the front outer faces to match the angle of the upper plate. Leave the whole assembly to dry.

For a mount, I 'cheated' and simply used the complete mount left over from a World War I Supply Tank conversion, cementing this fore and aft on the fighting compartment floor, dead centre and close up to the bulkhead. This very easy dodge positions the gun exactly and takes next to no time. Purists may demur, but the mount is concealed when the gun is in place and it seems pointless to make a more detailed fitting if it can't be seen. You can use a plastic washer to hold the trunnion pivot through the slot of the mount if desired. This will allow limited traverse. Otherwise the whole lot can be cemented 'solid'. A usual fitting was a cradle on the bonnet top to support the barrel when the front driver's flap was lowered. You can make this from wire or stretched sprue.



Above: Right and left views of Bren Carrier conversions.

OUR new series on the Carrier has led to requests for conversions from many readers. In fact, these were dealt with in detail in our September and December 1964 issues, but for the benefit of new readers brief notes for the Bren Gun Carrier conversion are repeated here. The chassis is built as for the Universal Carrier omitting the tow bar. The front superstructure is from the Universal Carrier parts with the sides cut off aft of the driving compartment. The main bulkhead is used but cut down to side level on the driver's side only. A new rear compartment on the left side only is made from plastic card following the pattern in drawing E. The engine cover is similarly cut down to match this outline and needs a new sloping back. Add a battery box (5 mm x 5 mm x 3 mm deep) on the rear left decking with a cable channel to the engine compartment, and add a long (16 mm x 2 mm x 2 mm) stowage box on the outer right chassis top. The picture should make the positions clear. Finally add new dustguards from paper in place of the dustguards given in the kit.



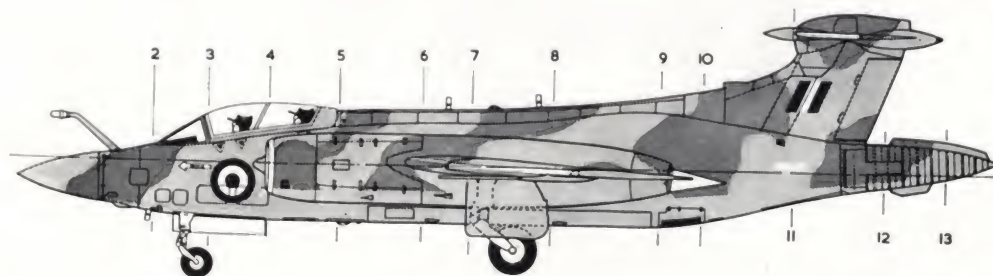
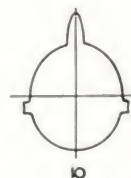
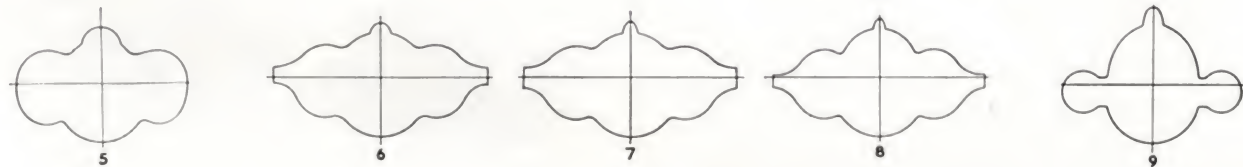
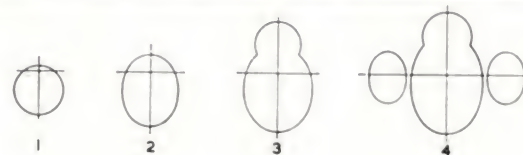
RAF BUCCANEERS

Colour notes by Michael J. F. Bowyer

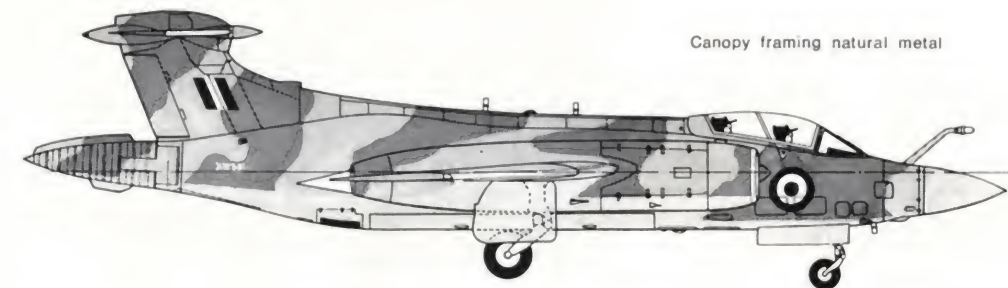
NOW undergoing operational trials, and scheduled later this year to be introduced into service at Honington, is the Buccaneer S2 which will equip some famous squadrons of the Royal Air Force. As well as No 12 Squadron, Buccaneers will equip squadrons in Germany presumably replacing the Canberra B8. The base for these aircraft will be Laarbruch.

Reproduced here are the official camouflage line drawings kindly provided by Hawker Siddeley of Brough, showing the colours and patterning applied to the RAF Buccaneers. Standard roundels are of three feet diameter, and the aircraft are painted in the usual colours of day attack aircraft like the Hunter and Harrier. XV350 in the accompanying photographs is carrying a typical load of four Martel missiles which are painted black with white trim. The interior of wheel bays and the bomb bay are painted in a darker shade of light grey. Details for the conversion of the Airfix kit into the Buccaneer S2 appear in our issue for December, 1968. It should be noted that the RAF colour pattern shown in that issue was provisional, depicting a machine painted up for the 1968 Farnborough display. The camouflage drawings given here supersede the earlier one. What these drawings don't show, of course, are squadron codes and/or markings, which will doubtless appear on service machines.

Above: XV350, in the RAF colour scheme for Buccaneer S2s drawn here, demonstrates its low level attack capabilities in a high speed pass over the rooftops. High gloss finish of the polyurethane paint is well evident. Note the white fuselage serials. Below: Same machine from below shows clearly the demarcation between upper and lower surface colours (Hawker Siddeley photos).

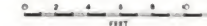


Fuselage cross-sections keyed to side elevation

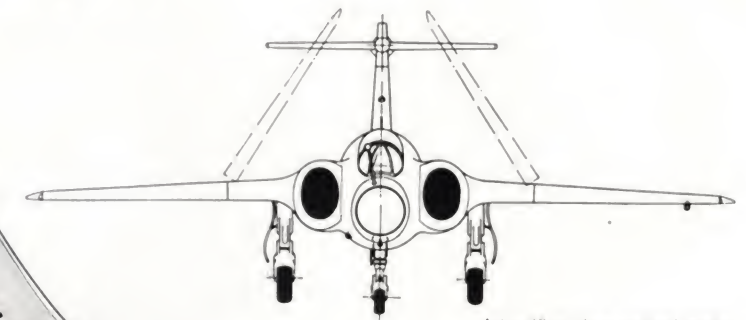


Canopy framing natural metal

Scale 1 : 144
Double all dimensions
for 1 : 72 scale models

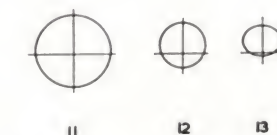
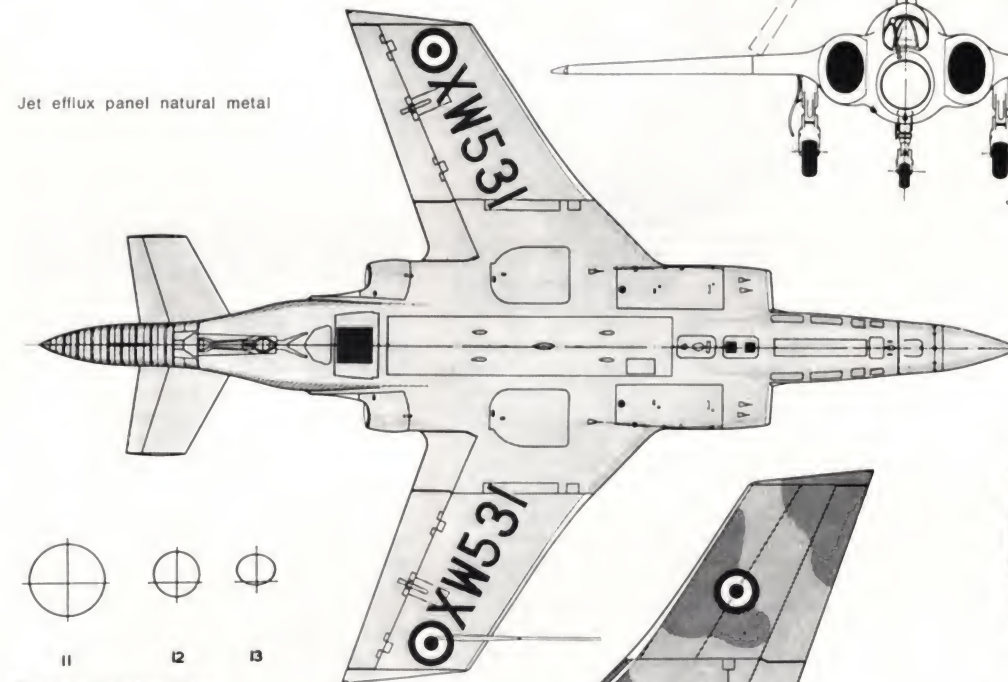


Outer wing leading edges white

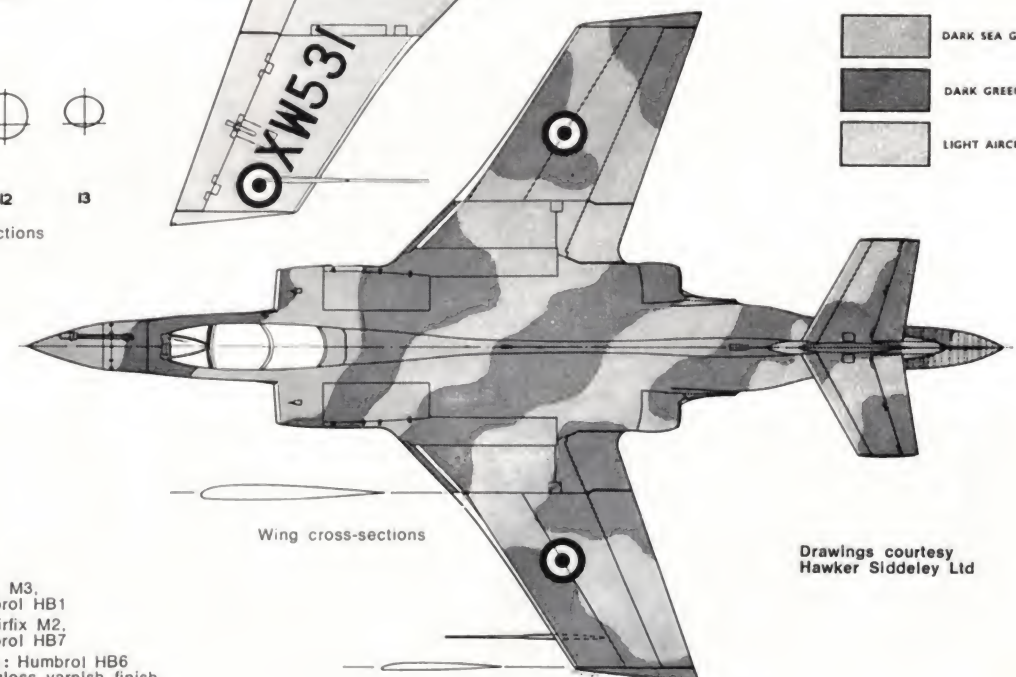


Jet orifice rims natural metal

Jet efflux panel natural metal



Fuselage cross-sections



Wing cross-sections

Colour matches:
Dark Green: Airfix M3,
Humbrol 30, Humbrol HB1
Dark Sea Grey: Airfix M2,
Humbrol 27, Humbrol HB7
Light Aircraft Grey: Humbrol HB6
All colours need gloss varnish finish

September, 1969

Drawings courtesy
Hawker Siddeley Ltd

An Iron Ore Tippler

FROM A MINERAL WAGON KIT

ONE of the easiest and most obvious conversions using the Airfix Mineral Wagon kit is a model of the BR 27 ton Iron Ore Tippler. These wagons resemble the standard 16 ton mineral wagon except that they have no doors. It is intended that the load should be discharged by a wagon tippler, that is the wagon is turned upside down to allow the contents to fall out. This is the sort of thing we are doing all the time on our model railways so it's nice to know it happens in full size practice as well!

Iron ore wagons are very numerous on BR but understandably they only operate between the sources of supply of iron ore and the great iron and steel works which process the mineral. They are, for example, very common around the South Midlands, Banbury and Oxfordshire areas, but totally unknown further south on the Southern Region. Therefore they are not the sort of wagon likely to turn up in your local goods yard. Similarly, if your model railway is one of the popular country branch line type you are unlikely to find much use for these wagons. Ideally you need one of the larger layouts depicting a main-line and a large industrial area to use these wagons convincingly. Factors like these should be considered when adding rolling stock to your layout but, whatever your type of layout, it is no crime to make one or two of these wagons, so here is how to go about it.

Below, left: Another view of the completed model. Note that scale three-link couplings (available separately from model shops) are used in place of the Airfix coupler. The choice of coupling is, of course, up to the modeller. **Below, right:** Full-size 4 mm scale (OO gauge) drawing from which to take measurements.



Easiest of all railway wagon conversions is this Iron Ore Tippler made from a 16 ton Mineral Wagon kit and ideal for beginners to railway modelling.



BY **NORMAN SIMMONS**

In the order of the Airfix instruction sheet we will begin with Section 1 which is construction of the brake, underframe and wheel assembly. First remove the doorstep from the centre of the two sole bars, parts 8 and 9. Remove the doorstops carefully and keep them to one side as they can be used in other wagon conversions, particularly the 24½ ton mineral wagon described in the July issue. Also remove the two projections either side of the doorstep on the face of the sole bars which normally form part of the support for the side door pivots on the mineral wagon. Now continue construction of the chassis as described in the instruction sheet except for the brake levers, stages 5 and 6.

A different form of brake lever is fitted to the Iron Ore Tipplers and is illustrated in the drawing. The Airfix brake lever, parts 10 and 11, are moulded integrally with the 'V' hanger. Cut the brake lever away from the 'V' hanger and cement the 'V' hanger in position inside the sole bar over the two projecting pins provided. Now extend the end of the brake lever with a strip of plastic card. It is preferable to use two pieces of card, one the thickness and width of the brake lever which is cemented to the end of the lever and another thinner strip which is cemented behind and acts as a kind of bracing strip. Provided they are liberally brushed with liquid cement and allowed to dry thoroughly undisturbed overnight, I find it is possible to trim, file and sandpaper these parts quite successfully and the join is not noticeable under a coat of paint.

Now assemble a second 'V' hanger out of plastic card and cement the top to the outside of the sole bar and build up the rodding as in the drawing. It will be noticed that the angle of slope of the brake lever is not so pronounced as on the mineral wagon so if you can, bend the lever to shape or, alternatively, cut it and cement it back in place at the correct angle.

Construction of the bodywork will depend rather on what previous conversions you have tackled and what spare parts you have available. I have by now accumulated a large selection of mineral wagon body spare parts

and I was able to draw on these for all the raw material needed in construction. However, if you are not so fortunate, 30 thou plastic card will do just as well.

The sides were first modified by removing the projecting hinge covers and by removing entirely the centre panel containing the side door opening and top door, etc, with vertical cuts made close to the side stanchions. A spare piece of body side left over from the 24½ ton mineral wagon conversion (or a piece of 30 thou plastic card if you have no spare pieces) was cut to exactly the width of the displaced centre panel (which should be 17.5 mm) and cemented in place. The spare piece of side panel which I used had two of the small triangular brackets just under the top angle piece. One of them was removed altogether and the other one was carefully cut and cemented in place and on the centre line of the panel. It was found when cutting this minute piece of

plastic that it adhered to the craft knife blade and it was a simple matter to fix it in place with a dab of liquid cement. The pair of sides were assembled on a sheet of glass to make sure they were flat and, while the cement was setting, they were checked with a straight edge to make sure they were remaining straight and level. Construction of the bodywork was completed by fixing the pair of sides together with two plain ends (parts 24) on to the underframe floor. In the absence of a spare plain end, one can be easily fabricated using 30 thou plastic card with 10 thou plastic card for the end stanchions.

The non-fitted Iron Ore Tipplers are painted the standard BR grey livery with white lettering and numbers on black panels. 'Iron Ore Tippler' appears in large white capital letters on a black panel on the centre panel of the sides. White 'Gill' Blick Dryprint is ideal for this lettering. No doubt the prominent marking is to make sure the

wagon is not mis-used. One can imagine the consternation if one was to be mistaken for an ordinary mineral wagon and it was to arrive at a goods yard with a load of coal and no doors to give access to it. The running numbers start at B 381500 and the tare weight is given as approximately 7 tons 14 cwt. A photograph of B 381500 shows it marked 7-13. There were variations with these wagons when they were built; for instance, some have vacuum brakes, some have roller bearings and some have oleo pneumatic buffers. There are other points of detail where the Iron Ore Tippler differs from the 16 ton mineral wagon which I have not mentioned here. I am thinking particularly of the underframe and the stiffer springs required because of the much heavier load. I hardly think they are worth worrying about as they would not be instantly recognised unless both types were to be viewed together at close quarters.

MARKINGS FOR SOVIET TANKS

Drawn and described by **Paolo Busnelli**

USUALLY Russian tanks didn't have any standard identification signs, but as this makes a model collection a bit monotonous, I have looked around and found some markings suitable for models. All the drawings are taken from combat photos so are as authentic as I can discover. I have chosen only tanks made by Airfix or possible to obtain from conversions.

Drawing 1 represents a T-34/85 turret. The numbers and letters were in white over olive drab. The tank had all the handrails as on the Airfix kit, the front stowage boxes and a tree trunk as an unditching beam.

Drawings 3 and 4 show the rear/side of

another T-34/85, photographed in the Briansk zone, with white letters and numbers on an olive drab tank. This vehicle had front stowage boxes, and over them rolls of blankets, very big fuel drums at the rear (diameter one and half that of the Airfix ones), spare track shoes on the glacis plate, and a tow rope around the hull. Apart from finding larger fuel tanks from your scrapbox, a model of this is 'standard'.

Drawing 5 shows markings of a KV-I in Leningrad, again white numbers on an olive drab tank, while drawing 6 shows a KV-I in Viasma; the tank was in white winter finish with black letters. Also shown is an enlargement of the inscription.

Drawings 7 and 8 show side and rear of a T-34/76 around Orel. This had olive drab finish with white numbers, front stowage boxes and fuel tanks, rounded mudguards and a very long tree trunk on

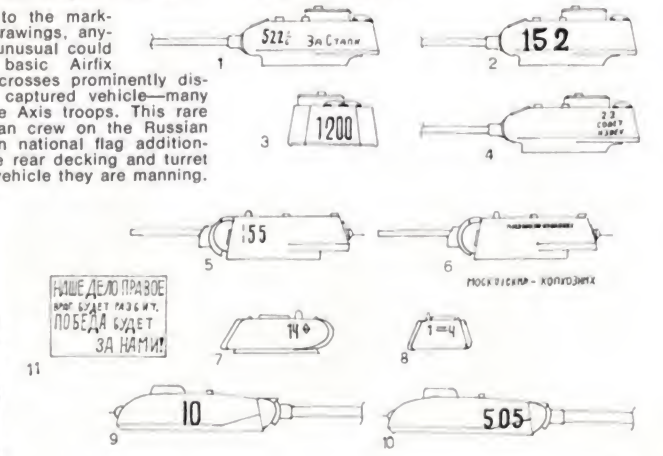
the side of the hull below the turret.

Drawing 9 shows markings of a JS2 in the closing stages of the war, in dark green with numbers in white.

Drawings 2 and 10 are from Korean war photos: the first (2) depicts a T-34/85 with the front right stowage box missing and the number (in white) reproduced on the front of the fuel tanks which are sited as per the standard Airfix kit. The other drawing depicts a JS2 with stowage boxes on the track covers and fuel tanks like those from the Airfix T-34 kit. Another JS2 with the number 403 in the same style also appeared in the picture from which the drawing was taken.

Last but not least, drawing 11 should be of interest to wargamers. It represents a poster nailed on a tree along a road during the Orel counter attack in 1942. The poster says: 'Our cause is the right one. Victory will be with us!'

Below: In addition to the markings shown in the drawings, anyone looking for the unusual could try finishing the basic Airfix T-34/76 with white crosses prominently displayed to depict a captured vehicle—many were so used by the Axis troops. This rare view shows an Italian crew on the Russian front with the Italian national flag additionally displayed on the rear decking and turret top of the captured vehicle they are manning.



Fire Engine—from page 6

kit and were cemented on to the rear panel. The searchlight and siren came from an Airfix Lincoln car kit. The running lead to the searchlight was made from black cotton, fuse wire and card. The flashing blue lamp was produced from a piece of balsa $\frac{1}{8}$ inch diameter \times $\frac{1}{8}$ inch long, painted blue, and the base surrounded by silver Baco-foil.

The ladders supplied with the toy may be used to represent the 20 foot extension ladders carried by the actual appliance. The depth of the ladder sides must be reduced to $\frac{1}{8}$ inch by means of a rough file and the final assembly painted silver. This ladder rests on two supports made from the plastic cocktail sticks cut to a length of 1 inch,



to which is cemented two pieces of the same material, $\frac{1}{8}$ inch long as shown in the drawing. The fire bell from the toy must be reduced in size, and this is achieved by removing plastic from the top and bottom to give an overall height of $\frac{1}{8}$ inch.

The chassis must now be modified to give the correct ground clearance of $\frac{3}{8}$ inch. First remove the front and rear, by cutting across the chassis $\frac{1}{2}$ inch from each axle, leaving the chassis 5 inches long.

To increase the ground clearance it is necessary to bend the edges upwards $\frac{1}{8}$ inch; this may be done by immersing the chassis in hot water, then using pliers to lever the edges upwards. The chassis is now ready to cement to the body, taking care to see that the ground clearance is the same all round the appliance.

Matador Conversions—from page 8

Head and side lamps are gloss black with silver lenses and the platform is matt brown. All lettering is from 'Blick' and 'Letraset' dry print transfer in black.

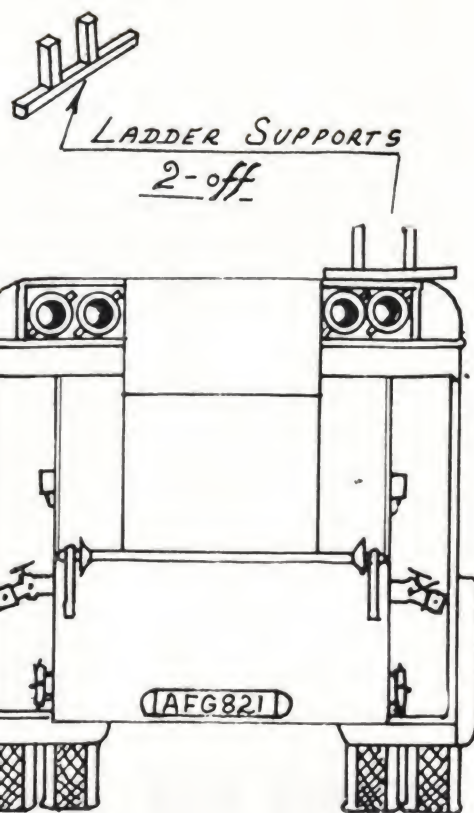
Finally fix a 10 BA washer to each of the four front wheels to represent the ring-step. Use Evo-stick or similar adhesive for this job. This concludes the first part of this double conversion.

4-Wheel Van

The second stage of the conversion uses most of the parts left over from the 8-wheeler conversion. Build up the chassis as per kit instructions after removing the towing hooks/spring units from each end of chassis. Remove by filing, the front axle differential box and cement the axles in place. Fix the drive shafts in place and join together with a 4 mm length of stretched plastic sprue. On this model I decided to make a few alterations just to add variety.

Remove both bars across windscreen. Now modify the radiator by removing the vertical centre and horizontal bars, using a modelling knife. The 'V' part of the radiator shell was scraped away at the same time. The finished result is similar to a Leyland or Atkinson though I cannot claim it a true scale representation of either. Fit the cab to the chassis and paint the rear of the cab now.

Make the van body parts from plastic sheet as per drawings and fit kit platform part 17 to chassis. When dry cement the new body parts to the platform. The roof is made by cutting two sections from the two kit roofs. One piece is 40 mm long and one piece is 23 mm long, and both are cemented together. When dry add to the body. Sand all over the roof with 0400 wet or dry paper to remove the



Colour Schemes

There are three colour schemes which may be applied to this appliance and these are:

- Fire engine red all over except for pump panel and roller shutter doors which are painted to represent aluminium.
- Fire engine red on front face and roof, the remainder aluminium.
- Yellow or cream with aluminium pump panels.

The city or county fire brigade should be added above the locker shutters; Blick letters may be used. My model is finished in red and silver as a City of Exeter Fire Brigade appliance.

'canvas' patterning.

Next cut a slice from the surplus roof $\frac{1}{8}$ inch wide. Sand to semi-circular section to form the front bumper. Make and fit the headlamps from scrap plastic and make and fit the new cab roof from plastic card. When dry carry out final shaping and radius all the cab edges.

Now we come to the problem of the wheels. This was resolved by purchasing two 6d toy plastic cars available from any chain store. The wheels are 12 mm diameter and quite suitable for a delivery van of this type. They are moulded complete with axles in soft black polythene plastic. Cut the wheels from the axles, and drill a hole to take the kit axles. Cement two pairs together using Evo-stick or similar adhesive to make the rear wheels, then fix to chassis. A small hole is drilled into the right hand side of the body for access to filler cap. The model is now painted, my own having a red cab, white body, with cab and body roof in black and chassis in matt black. As the wheels are moulded in black it just remains to paint the hubs. Bumper and headlamps are silver. Lettering is black Blick dry print transfer.

Below: Another view of the lorry conversion.



Manchester from a Lancaster

SPECIAL REQUEST CONVERSION

BY ALAN W. HALL

CONVERTING the Lancaster into a Manchester has been high on the list of readers' requests for some time. It has been featured before in AIRFIX magazine (April 1963) but this is long out of print and there are many new readers since then.

To change a Lancaster into a Manchester is without doubt a major job. Not only do you have to make a four engined bomber into a twin engined one but almost every other part of the original kit is affected with the exception of the fuselage length—and that alters slightly if you count the odd few inches involved in rubbing down the bomb aimer's canopy! The complete task from start to finish took me 58 hours or three weeks of evening and weekend work, but you could well spend longer at it.

The work in most cases is not too difficult but it is time consuming. Most of this is spent in rubbing down wooden parts, painting and making new canopies. I found that the work could be split up into several distinct sections which was very convenient as it was possible to work on one whilst other parts were drying out or setting. The secret is to keep the wings separate from the fuselage until the model is completed. Some modellers may even wish to leave the wings off altogether as the model will pack away into a smaller space and the risk of damage is less. The original kit wing-to-fuselage joint is an excellent one as those who have already made up the Lancaster kit will agree. The port wing in particular is a perfect fit and slots into position easily every time. The starboard side is a little slack and tends to be sloppy to start with but the application of several coats of paint makes the joint tighter.

The failure of the Manchester as an operational aircraft was one of the RAF's greatest disappointments at the beginning of World War 2. Basically the aircraft was an excellent one and the airframe gave no problems. The Vulture engines were however the weak link in the chain and Manchesters fell out of the sky at frequent intervals both on training or operational missions because of the unreliability of the power plant.

Contracts for large scale production were cancelled after just over 200 had been built. They started to replace Hampdens and Whitleys



Above: Mid-upper turret assembly; hole drilled in fuselage balsa block with a Stirling turret ready for fitting.

September, 1969



Top: Manchester L7284: D-EM of 207 Sqn displaying the distinctive central fin (Imperial War Museum). Above: Completed model depicting a machine of 106 Sqn.

in the squadrons during 1941 with the first aircraft going to No 207 Squadron at Waddington on November 10, 1940. Other squadrons involved included Nos 44, (KM), 49 (EA), 50 (VN), 57 (QT), 61 (QR), 83 (OL), 97 (OF), 106 (ZN), 144 (PL), 156, (GT), 408 (EQ) and 420 (PY). The letters after each squadron indicate the squadron codes used. No 207 Squadron used the codes EM.

Several variants appeared in service which gives the model maker a fair amount of scope. Early aircraft appeared without the top turret but had provision for a ventral turret aft of the bomb bay. Later a Frazer Nash mid-upper turret was added. The other major modification was to the tail unit. The Mk 1a designation was given to later examples which had an increased span, 33 ft from 28 ft on the tailplane, Lancaster type fins and rudders and the central fuselage-mounted fin deleted.

Reference material on the Manchester is fairly easy to find. One of the best sources is Harleyford's *The Lancaster*, by Bruce Robertson which gives extensive detail on the Manchester and includes the serial numbers, squadron use and in many cases codes of all aircraft built. Good photographs appeared in *Bomber Squadrons of the RAF* by Phillip Moyes and there is a five view colour drawing (on which Richard Gardner based his own illustrations) in the Hylton Lacy book *RAF Bombers of World War 2*. Photographs in this book too were all excellent and provided adequate material on which to work.

As the work of converting the Lancaster can be divided into various sections such as wings, fuselage, tail unit and so on I have dispensed with my normal method of description and dealt with the subjects under different headings. The order in which these parts are tackled is up to the individual.

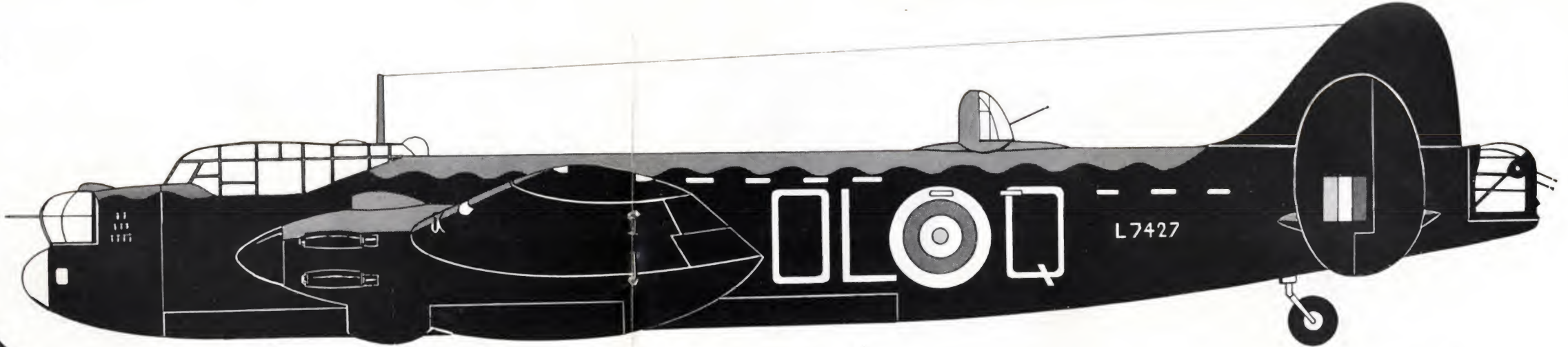
FUSELAGE This is perhaps the easiest of the various parts as luckily the fuselage length of the Manchester was exactly the same as the Lancaster apart from the few inches difference in the bomb aimer's window on the nose. After having assembled the cockpit detail and added the nose turret the two fuselage halves are stuck together and set aside to dry.

I removed the Lancaster turret fairings completely by cutting away a rectangular section $1\frac{1}{2}$ inches long and of sufficient depth to clear the lower part of the fairing. A balsa wood plug is added which when it has dried out is shaped to the rest of the fuselage section. A liberal coating of filler is applied and the whole section rubbed down until the joint lines are clean. At the same time it is worth removing some of the rather heavy detailing on the fuselage as this will also be removed from the wings during their preparation and it looks odd to see one part of one model with heavy surface detail and the rest not.

At this stage modellers may wish to leave the Frazer Nash turret off as in the drawing but the construction of the turret presents no real problem and does add to the final finish of the model. The turret used was left over from a Stirling transport conversion. This was assembled on its base with the guns in position. The lower rim of the mounting is removed and a hole in the fuselage balsa block cut out. To do this I used a coarse bit in the drill to get most of the area away and then finished with sandpaper. With luck you will find that you have located the hole exactly over the mounting for the Lancaster turret which is left in the fuselage and the new turret will slot into the position with ease. Some Manchesters had low fairings in front and behind the turret and these can be made from plastic wood and sanded into shape before the turret is stuck in place.

Continued on page 26. Scale drawings on next page

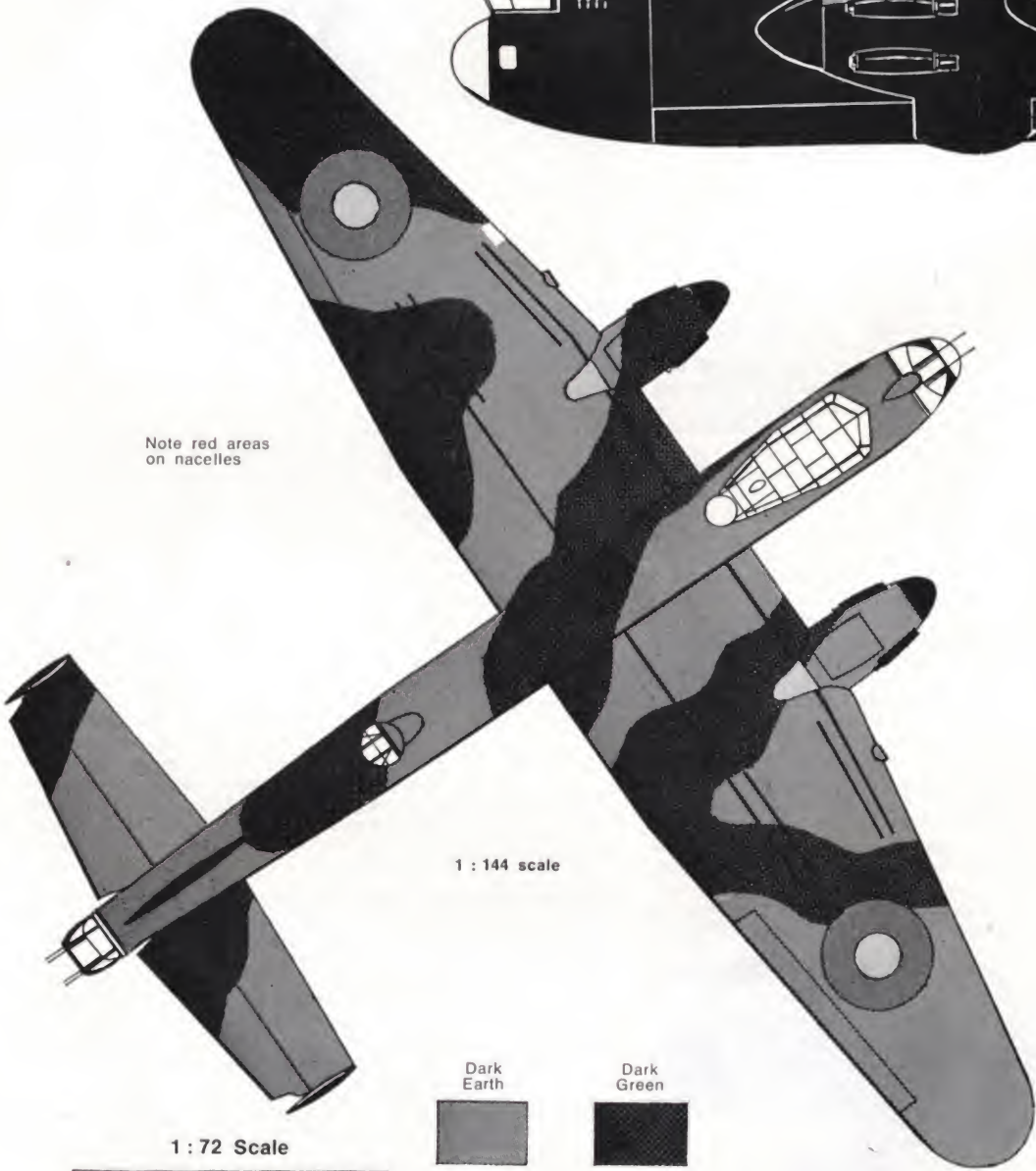
Avro Manchester Mk I, L7427, of 83 Sqn, Scampton, 1942



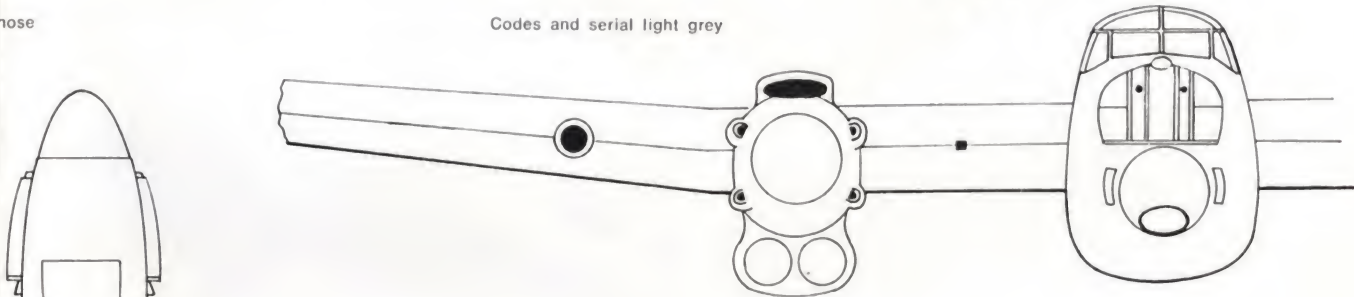
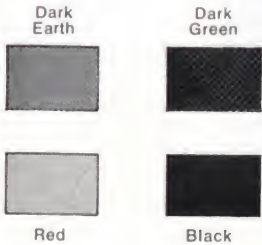
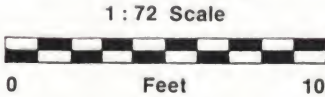
Note mission tallies on nose

Codes and serial light grey

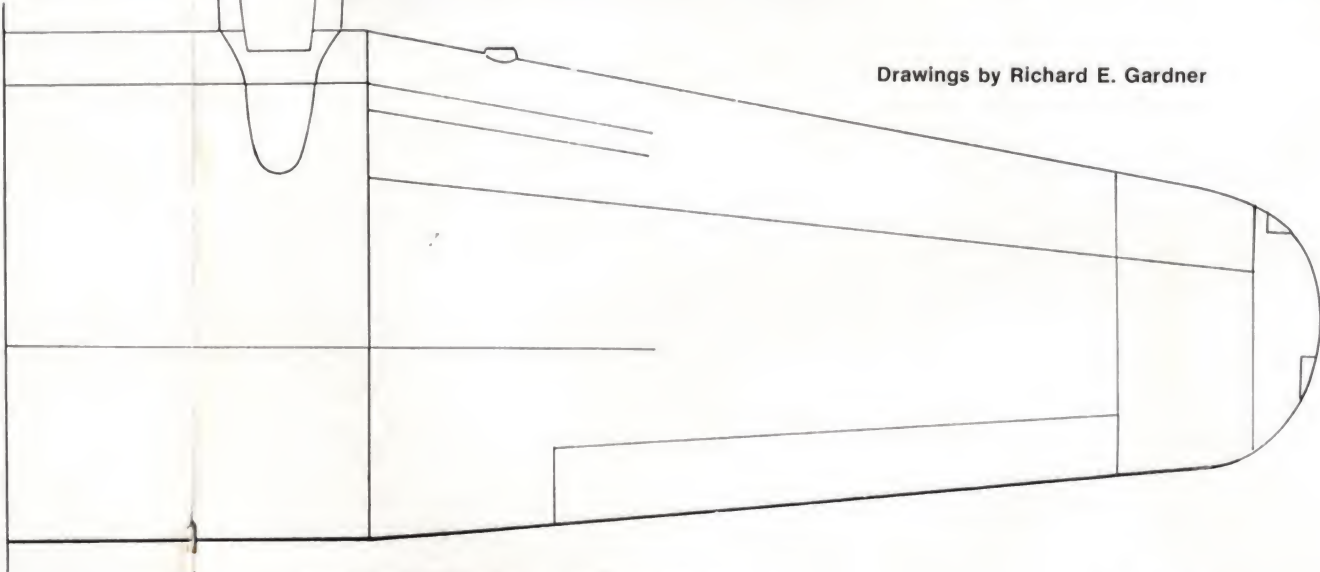
Note red areas on nacelles



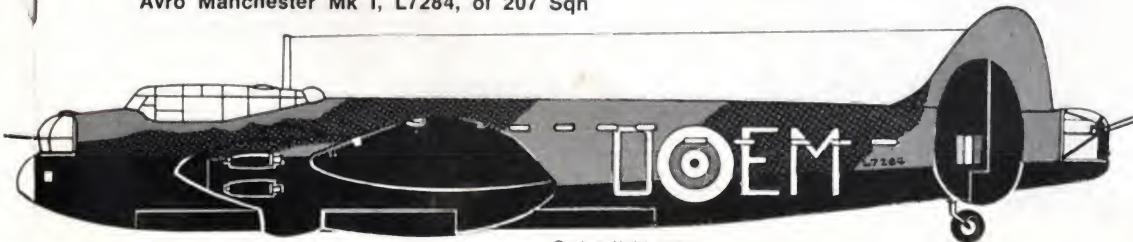
1 : 144 scale



Drawings by Richard E. Gardner



Avro Manchester Mk I, L7284, of 207 Sqn



1 : 144 scale

Codes light grey, serial white

Manchester—continued

WINGS Both wing halves are assembled as for a Lancaster. I debated whether or not to cut the outer wing panels off altogether or try to reshape them. Time dictated that the former course was the best and I therefore removed the outer panels at the start of the dihedral line.

The outer panels were cut from balsa plank $\frac{1}{8}$ inch thick. A tracing from the plan was used to transfer the shape and this was traced down on to the balsa through carbon paper.

A one inch chisel was used to carve most of the wing cross section and then the remainder was taken down firstly with coarse sandpaper and finally with well worn 'wet and dry' paper. The dihedral angle at the root of the new wing was dealt with carefully as both wings had to match in dihedral angle. To do this I rubbed the cross section on sandpaper, frequently comparing the results against the plastic part of the wing and in turn against the other side. The wooden and plastic parts are joined, the whole given several coats of filler and rubbed down thoroughly until a near perfect finish is achieved. The two halves of each of the Lancaster ailerons are assembled and the leading edges rubbed down to fit the shape of the ailerons for the Manchester. By scribbling round their outlines when in position on the wing I was able to cut out neat slots for each by using a very sharp knife. Each aileron is then stuck in position.

A position for the landing light is cut out in a similar manner from the port wing. The actual transparency will be dealt with later and it is worth keeping the piece of wood removed as this can be used as a former for moulding the landing light.

Circular wing air intakes just outboard of the engines are next considered. Here I used pieces of dowel rod cut into a V shape at one end with the actual circular hole drilled into the other. By cutting a similar shaped V in the right position on the wing I was able to slot the intakes in position and then after having applied a liberal amount of filler regain the wing leading edge shape with the intake nicely fitted in position. A careful study of available photographs is of value here to see the exact shape these intakes require.

Before leaving the wings I took care to see that the wing slots accepted the wing at the fuselage joint and found that slight filing was necessary on one side.

ENGINE NACELLES Like the outer wings these too have to be made up from balsa. I made them from three pieces of wood partly pre-shaped before addition to the remains of the Lancaster inner engine nacelle which is stuck in place on the wing after that part of the construction is complete.

The three parts consist of the main engine nacelle and the upper and lower radiators. After having cut the plastic nacelle away at the leading edge of the wing a piece of balsa is stuck in place which lines up with the top of the plastic at the top, leaving room for the lower radiator to be put in place underneath it. Both parts must be cut roughly to shape before cementing them to the nacelle stub as the subtle shape of the joint between the cross section of the lower radiator and the engine cannot otherwise be properly achieved. The upper radiator is also pre-shaped—its outline is first cut from balsa sheet and the intake hollowed out. It is then stuck down and the nacelle finally finished. The lower radiator has two holes drilled in the front before shaping begins. The outline can then safely be finished off without fear of damage to the remainder. Care must be taken in finishing to match the diameter of the spinner to the cross section of the nacelle. The former is not stuck in place until a coating of filler has been applied and rubbed down. Exhausts, two to each side of the nacelle are filed from scrap spruce and added before the final coat of filler is applied.

The undercarriage of the Lancaster suits the Manchester. The wheels of the latter were slightly smaller than those of the Lancaster but the difference is so small you need not bother to rub down the kit wheels before putting them in place.

TAIL UNIT The Manchester's tailplane in the triple fin version is five feet less in span than that of the Lancaster. It is fairly easy to cut this unwanted piece from the kit tailplane after having measured off the required distance from the plan. The locating tab naturally has to go in this surgery but there should be no difficulty in cementing the revised tailplane back in position. During the cleaning up operations I also reduced the size of the rivet detail on this section to conform with the rest of the model.

The central fin has to be made from balsa wood. For this I took a piece of $\frac{1}{8}$ inch sheet and after having traced the shape from the plan, I cut the outline to shape and then obtained the aerodynamic shape with sandpaper. As the fin is of fairly light construction I did not consider it necessary to cut and slot in the top of the fuselage and preferred to cement it in place with polystyrene cement. When completed, the entire fin was given a thick coating of filler which was sanded down (and repeated) before being ready for painting.

The outer fins and rudders are taken from the Lancaster kit but cut down con-

Below: The completed model ready for painting. Canopy has been placed in position for the picture but is not cemented on until after painting. All wooden parts must be velvet smooth using dope/talcum filler moisture and sanding as described in previous articles.



Above, top to bottom: Fitting the new balsa outer wing panels to the cut down Lancaster wings. The new engines in place after final shaping are given a coat of filler. Close up of the central fin after cementing in place.

siderably. Most of the top of the fin is removed by a saw cut and the remainder of the unwanted area carved away with a knife. Files and 'wet and dry' paper are used to give the final shape.

TRANSPARENCIES The mid-upper and nose turrets have been dealt with already in this conversion. Most attention has to be given to the cockpit canopy which has to have the kit canopy's astro dome removed with a fine toothed fret-saw. The dome is then sanded down until it is lower than the original and the whole cemented back in place when the rest of the canopy is stuck to the model.

Before doing this a radio aerial is cut from plastic card and a hole of suitable size drilled in the roof of the canopy. By using a file I was able to lengthen the hole into a slit which took the aerial satisfactorily. The drilled hole went right through to the top of the fuselage and the aerial was notched so that this provided a secure foundation for the whole assembly. The two side blisters are added after the transparency has been located in position on the model. To do this I held each in the tweezers and painted a thin outer line round the edge using an old thin brush and liquid polystyrene cement.

Next comes the bomb aimer's transparency. This is not so deep as that of the Lancaster; consequently it has to be rubbed down before assembly. The area around the nose to which it is cemented can also be rubbed down slightly so as to keep the fit accurate.

The rear turret which has a shape all of its own will have to be moulded. Firstly a former or male mould has to be shaped to fit the requirements. This is finished with a filler and sanded down before moulding can start. The female mould is also cut from obechi sheet and I moulded the turret after the style already described in previous conversion articles. Similarly the port wing landing light has to be moulded but here you can use the wood cut away when the wings were dealt with so there is no need to make another mould. If you do not want to mould a new rear turret it is possible—just—to use the discarded Lancaster dorsal turret turned on its end, trimmed to fit, and sanded. The gun slots need to be extended, however, and the whole transparency must be re-polished after sanding. A landing light transparency can be sanded from thick clear spruce.

PAINTING AND MARKINGS Painting this model is fairly straightforward as it follows the standard scheme for Bomber Command aircraft during the period. The only difficult part is the wavy camouflage line on the fuselage but this should not be too difficult if a small brush is used and you can touch up here and there if necessary.

The most difficult to find are the grey codes. I know of no manufacturer supplying these letters to the correct size in grey so there was only one thing for it and that was to paint the codes on by hand. This is one good reason for not sticking the wings and fuselage together earlier on.

AIRFIX magazine

GERMAN ARMY HORSE-DRAWN TRANSPORT, 1939-45

By W. J. K. Davies

AS is well-known, the greater part of the Wehrmacht line infantry divisions during the 1939-45 war depended mainly on horse-drawn transport. This was a matter of policy since infantry divisions were intended for 'mopping-up' and garrison duties, the theory being that all long-distance movement both of troops and heavy equipment would be carried out by rail. Hence only local mobility was required, to a radius of about twenty miles, and a number of standard vehicle types was designed to meet this need.

In theory these were efficient metal-bodied wagons running on pneumatic tyres but in practice a large proportion of old vehicles with iron-shod wheels was often included in a division's complement; these were basically 1914-18 types and would be quite at home with the Airfix troops of that period!

The basic 'issue' vehicles to the infantry battalions were various types of limber (*carren*) and trailers (*anhänger*); and two-horse, four-wheeled light carts (*feldwagen*). This article describes the most common limber types and the way in which the Airfix Civil War Artillery set can be used in conversion.

If8: Infanteriecarren mit anhang

The most common vehicles, issued on a basis of four per platoon of the rifle company, were the light limbers and trailers. These were light, two-wheeled box limbers used for platoon stores and ammunition, and fitted with pneumatic tyred wheels which enabled one horse to pull a limber and trailer—an efficient vehicle insofar as horse transport could be efficient! Canvas tarpaulin covers were provided to allow of storage on the limber 'deck' as well as in the box and the trailer could be fitted with an anti-aircraft gun mounting for one MG 34.

These limbers are very simply made, as Fig 1 shows. They are just balsa slabs with a thin card top to simulate the overhang of the lid, the whole being topped with a scrap of grey-blue cloth padded with cotton wool to give the humpy effect of a canvas-covered load. The axles are made of squared balsa, rounded off at each end to take Airfix jeep wheels. The two limbers are joined by a thick piece of wire as shown to form the 'gabeldeicnsel' hitching post—I used florist's wire which seems about the right gauge. The horse can be either the saddle-horse from the Civil War Artillery set or one of the team horses, and is hitched to the limber with black cotton. The traces, two each side, are fastened to a body harness. The limbers

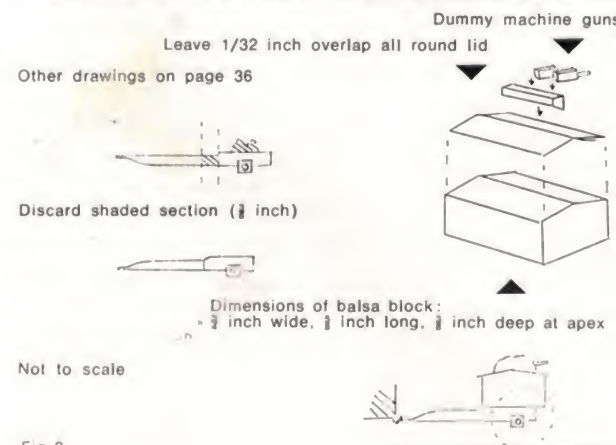


Fig 3
September, 1969



Top: Horse team and special limber with the machine gun wagon in tow. The telephone wagon used with the same pattern limber is seen standing to the right. **Above:** Another view shows the horse team and limber with the machine gun and telephone wagons standing separately.

should be painted dark grey, or Humbrol dark green with black strapping lines.

Special Limbers, old type

Limbers and trailers, usually of 1914-18 pattern with iron-tyred wheels and two-horse teams, were issued both to infantry battalion heavy sections and to Regimental services sections (the German Regiment—pronounced with a hard 'g'—equated roughly with a British Brigade). The two main varieties were the machine gun wagons issued to heavy machine gun sections of infantry rifle companies and to heavy companies of battalions; and the communications wagons for regimental signals platoons. Mortars, which would appear likely candidates for special treatment, were either carried on infanteriecarren (81 mm) or towed by motor vehicles (12 cm).



Above: The widely used Infanteriecarren is a simply made model essential for all miniature German World War 2 Forces.

Both these wagons can be built easily with the aid of the Civil War Artillery set. For each limber-and-trailer you will need the set's limber, one gun carriage with wheels, and two horses, preferably the 'offside' horses without saddles since the outfit was normally driven from the limber.

The first part, common to both types of vehicle, is the driving limber. Take the Airfix limber and cut off the pole about $\frac{1}{2}$ inch ahead of the first pair of 'pins' (see Fig 2). This is to represent the German method of harnessing which involved traces leading to a pole projecting in front of the horse. Now take a piece of thin card (postcard is fine) shaped as in Fig 2 and glue it on top of the limber seat, flush with the edge, to represent the seat arms and back. Make two loops from 5 amp fuse wire and glue them inside the 'arms' as shown to provide grab handles. Lastly cut a piece of card the same length across as the limber footboard but a little wider. Bend the front portion of this up at about 45 degrees and stick the card to the existing footboard (see Fig 2). If desired, a fold of cloth can be added to the seat-back to represent a folded canvas tilt; as I have no pictures of this extended, I cannot be more specific.

Continued on page 36

THE FAIREY BATTLE

IT LOOKED beautiful in the box. No metal struts, a three-bladed aluminium airscrew, wheels of black bakelite, and a lead cast canopy. The tail unit was made of fibre. Yet perhaps the most exciting thing of all was that it was a Christmas present—the latest Skybird kit, the Fairey Battle. I hadn't then seen a Battle, for only the prototype was flying. What did strike me—apart from its fine lines seemingly accentuated in Skybird kit form—was that this would be a large aeroplane to be powered by a single Merlin engine. Like any eager modeller I soon had its silver shape in my collection, and from that moment took an interest in the Battle's fortunes.

Almost from its inception the real-life Battle was luckless. It was planned as a light bomber replacement for the Hawker Hart, to Specification P.27/32 issued April, 1933, calling for a two-seater monoplane carrying a 1000 lb bomb load for 1000 miles with speed to match that of the larger twin engined aircraft called for by B.9/32. The same year as it was issued, the Deputy Chief of Air Staff indicated that the issued specification was not likely to produce a high performance aeroplane such as was required. Already the specification was out to tender and all that could be done was to alter some requirements to bring P.27/32 more into line in performance with B.9/32, the Sidestrand replacement.

Fairey partly re-designed their bomber as a three-seater but it



clearly wouldn't match the quality of the twins—and it was the best design tendered to P.27/32. Production of 155 Battles was ordered for this was the only light bomber ready to answer the great and urgent call for re-armament. It was 1935 and the prototype had yet to fly. A full contract to 23/35 covering 655 aircraft (ultimately K7558-7712, K9176-9486, N2020-2066, N2082-2131, N2147-2190, N2211-2258) was signed with Fairey on May 23, 1936. A new factory was to rise at Heaton Chapel to build them. Austin Motors of Longbridge then signified they could build as many as 900 Battles, but at first only 400 came on to contract with proviso for another 100.

The Battle prototype was built at Hayes and it made its first flight from Northolt on March 10, 1936. Service trials showed it to have a top speed of 257 mph. Bombs were accommodated in wing cells, and the load could be increased by the addition of external light series carriers.

Type handling trials were conducted with the first production Battle, K7558, which flew early in 1937. At Martlesham it



K4303 the all-silver Battle prototype (Imperial War Museum).



Top: Three Battles of No 218 Squadron over France. Note small fuselage roundels and variations in the code colours, all shades of grey. K9353: HA-J is a Mk II likewise K9324: HA-B and K9325: HA-D. An interesting point is that although the two aircraft have adjacent serials their paint schemes are similar and not conforming to any A and B Schemes. Above: N2045 and L5136 of No 3 Bombing and Gunnery School in 1940. Note the differing fin striping, and the yellow sides to the aircraft which appear to have black under surfaces. L5136 is also unusual in having rudder serials. 'S' on the nearest aircraft is probably painted on in white (Imperial War Museum).

showed itself to have a top speed of 241 mph at 13,000 ft, a likely range of 1050 miles, and to be very docile to handle. But it did not match requirements. It was therefore decided to cancel all Battles ordered from Fairey not delivered by March 31, 1939. At the same time another problem arose; aircraft planned to specification P.13/36 would not be available now until 1940. To answer this unfortunate situation it was decided to place stop-gap orders; Fairey's order was reinstated and an extra 363 were ordered from Austin bringing their total to 863 (L4935-5797) under Specifications 14/36 and 32/36 respectively.

Production rate from Austins dragged, but Fairey were soon doing well. They therefore received two extra orders, for 150 on November 1, 1938, (P1255-2204, P2233-2278, P2300-2336, P2353-2369) and 50 on December 15, 1938, (P5228-5252, P5270-5294). Another 200 (P6480-6509, P6523-6572, P6596-6645, P6663-6692, P6718-6737, P6750-6769) were ordered from Fairey on February 11, 1939. These repeat orders were planned to keep the industrial labour force intact, and for similar reasons Austin and Fairey each received orders for 100 Battles on June 27, 1939 and September 29, built as R3922-3971, R3990-4019, R3035-3054 and R7356-7385, R7399-7448, R7461-7480 respectively, with the proviso that both manufacturers built up their work forces. A feature of the last two contracts was that the aircraft would be delivered without engines.

Already the Battle was considered unworthy of further development but at the outbreak of war 300 Battles were ordered from Austin to be built as target towers although only 66 of

these (V1201-1250, V1265-1280) were completed. Production ended in December, 1940.

Originally all the Battles were designated Mk I. The first 136 built had Merlin Is fitted. From K7695 the Merlin II was installed, aircraft thus fitted being retrospectively known as Mk IIs. Fairey's second batch all had Merlin IIs initially, and L4935-4993 had them too. From this point nearly all of the Austin batch had Merlin IIIs and were known as Battle IIIs. Some machines were later fitted with the Merlin IV or the Mk V which had a higher boost pressure, eg, N2176, N2177 both converted from Mk III to Mk V. In the N2' series those up to N2109 had Merlin IIs and the remainder Mk IIIs. The R3922-4054 range were all Battle IIIs initially. Austin delivery began on August 25, 1938, and when the war began deliveries were in the P2310 and L5320 regions.

Two changes in the external configuration of the Battle were made. The last 200 in the L production series were completed as target tugs, with a drogue box under the rear fuselage and a winch on the port side of the fuselage by the rear cockpit. L5598, the production prototype, was built in February, 1940, and delivered on March 7. On trials it had a top speed of 233 mph. Apart from those built as such some other Battles were converted into target tug aircraft, eg, L5186, L5039.

The Battle (T), or Trainer, was developed in 1939. It featured two separate cockpits, the rear one for the instructor. P2277 was the prototype and the ranges P6616-6769 and R7356-7480 were built as trainers. The Battle (T) makes a straightforward kit conversion subject and was well dealt with by Alan Hall in our issue of August, 1968.

Delivery of the Battle bomber began with K7559 on May 20, 1937, to 63 Squadron at Upwood. Like some others of the early aircraft this was fitted with dual controls. It became 'A' of 63 Squadron. Delivery was slow, K7562, K7563 and K7566 joining the squadron in June, five more in July, three in August. No 105 Squadron was next, Battles beginning to filter into the Squadron in August, 1937. Nos 226 and 52 Squadrons followed, and 88 Squadron started to receive Battles in December, 1937. Thereafter it was Nos 218, 12, 142, 35, 207, 98, 15, 40, 106, 185, 103 and 150 Squadrons which equipped in that order. Changes in the engine marks led to delivery of later aircraft to these units. The first Austin-built Battle to join a squadron was L4936, which reached No 142 on October 8, 1938.

Battles joined the squadrons wearing dark green and dark earth camouflage in 'A' and 'B' Schemes, one the mirror image of the other. Under surfaces were black, and upon them white serial numbers were painted. Type A roundels were carried on upper wings and fuselage, and black serials appeared on the fuselage and rudder. Squadron number and aircraft letter was applied in grey as on K7576:105-D and K7654:0-218, the numbers being forward of the roundels. At the time of the Munich crisis squadrons changed their roundels to Type B often over-painting the yellow band in camouflage colour, and serial numbers were removed in some cases. Some units also applied the newly introduced squadron code letters K7606 becoming MB-N of 52 Squadron. It was apparently March, 1939, before these became universal on the Battles.

During the pre-war air defence exercises Battles were busy, but by 1939 some squadrons including 35, 52 and 63 were increasingly given over to aircrew training at the operational stage.

After the Munich crisis, plans were agreed for the Advanced Air Striking Force comprising two Blenheim squadrons and the Battles of 1 Group. These were, in the event of hostilities, to move to France and attack German targets from advanced bases.

Increased production enabled Battle squadrons to re-equip September, 1969



Top to bottom: A 1937 photo of a Battle I K7596 with 226 and C in light grey on the usual green-brown-black finish. Battles of No 142 Squadron shortly after the Munich crisis. K9335 nearest wears the usual trim, but the furthest aircraft has red and blue roundels and small KB coding. A rare picture of a Battle with a fairing spinner, K7558. This machine was the first production Battle and apart from spinner trials (the results of which showed difficult maintenance) it was used for the development of flaps by Fairey. Three Battles of 88 Sqn. RH-L is K9248 and RH-K is K9322. RH-L has traces on the wings of former roundels with yellow surround. An interesting feature of RH-K is that its camouflage pattern is the same as the others, but the colours are reversed (Imperial War Museum).

with later versions. This released aircraft to give realistic training facilities to pilots at the Elementary and Reserve Flying Training Schools which flourished in 1938 and '39 throughout the country, run by civilian organisations. K7622 ex 'Q' of 105 Squadron, with '122' in yellow ahead of the fuselage roundels became a familiar sight for me at 22 ERFTS, Cambridge, where it replaced an earlier '122', K7618, which crashed on June 7, 1939. Another Battle used was K7625:121 which came from 52 Sqn, Upwood. Others in the ERFTSs included K7612:A of 16 ERFTS in 1939 and K7646 of 12 ERFTS. No 1 Air Armament School also had a number of Battles before the war including K7668 and K7669.

Ten Squadrons of Battles flew to France on September 2, 1939. They landed on rough airfields, there to await ground crews and an order for offensive action which never came.

Continued on next page

Although elaborate plans had been laid to attack Ruhr targets, no order came as both sides refrained from attacking land based targets. Instead the Battles were soon committed to armed daylight reconnaissances over the Rhineland and the Siegfried Line. For enemy fighters they proved themselves easy meat, as when three from 88 Squadron were set upon by three Bf 109s. K9242 and K9245 were soon shot down leaving only K9243 to return. The latter laid claim to the first Bf 109 shot down by the RAF. On September 30, ten days later, four out of five 150 Sqn machines on patrol were destroyed, amongst them N2028. As a result several attempts were made to give the Battle a ventral gun but none were very successful and a serious blind spot remained. A better solution was decided upon, the re-equipment of all the Battle squadrons with Blenheims. But in the event only 15 and 40 were re-equipped. Battles used in France at this stage included K9368:PH-F, K9330:MQ-W, K9311:RH-L and K9353:HA-J.

Two new uses for the Battle were found in fighter roles in



Above: This line-up of 88 Sqn shows RH-L:K9244 and RH-P:K9282 with a rudder serial (painted out on RH-L) in evidence long after the order to remove such was given. RH-P has a much enlarged centre red disc to the fuselage roundel (Imperial War Museum).

1939. First came their employment for the conversion and training of pilots for Hurricanes, K7659 going to No 32 Sqn and K7609, for instance, to 73 Sqn. When it was decided to considerably expand Fighter Command in October, 1939, Battles initially equipped some squadrons. L5133 was progressively used by Nos 253, 242 and 141 Squadrons and 253 Squadron had others amongst L5089 and L5099. A later similar use for the Battle came in 1941 and '42 when army co-operation squadrons used it to convert crews from Lysanders to Tomahawks and Mustangs. N2084 served 268 Sqn in this role, in June 1942. Earlier some of the Auxiliary Air Force squadrons had Battles in their mixed complements for similar purposes, 610 for instance having N2064.

During the winter of 1939-40 the Battle squadrons in France were largely given over to operational and armament training, to making mock attacks on convoys and bridges, and to night cross-country flying. Their operational role was now to attack enemy troop movements and communications in the case of enemy attack in the West. Between February and May various night alerts came to the squadrons and a few sorties were flown over the Rhineland to deliver leaflets and at the same time train crews. P2354:MQ-H was one aircraft used for these sorties.

It was some six hours after the German assault on France and the Benelux countries on May 10, 1940, that the AASF squadrons went into action. The French, eager to restrict if possible the scope of enemy action, and fearing massive retaliation, were not keen to allow offensive action from their territory. But the situation quickly became serious. Around mid-day British bombers were ordered into action, the Battles against enemy columns advancing through Luxembourg. Very low-level attacks were called for, and fierce light anti-aircraft fire faced the raiders. Thirty-two sorties were flown that day and thirteen



Above: L5420 flew six operations with 12 Sqn as PH-N. Here she is seen in later guise wearing still the narrow yellow band round her fuselage roundel and broad fin stripes as applied in France. Note the metal anti-glare fitting just forward of the cockpit. Nearest machine with Boomerang nose marking was presumably flown by an Australian (Imperial War Museum).

Battles were lost including L4949:PH-V flown by Flight Lieutenant Bill Simpson whose courageous story is told in the book *I Burnt My Fingers*. Next day 88 and 218 Squadrons sent eight aircraft into action and only one returned. Then followed a tremendous effort by the AASF and the Blenheims of 2 Group to halt the enemy advance at Maastricht. Bridges and roads were the targets, small and needing to be destroyed in the face of intense flak and fighter opposition. Later volunteers were called for from 12 Squadron to attack two bridges. Five Battles L5227:PH-J, L5349:PH-N, L5241:PH-G, P2322:PH-F and P2204:PH-K set out. All five were shot down and the bridges were probably only badly damaged. The leader of the second section, Flying Officer D. E. Garland with Sgt T. Gray in P2204 were awarded the first Victoria Crosses given to RAF personnel in the war as a tribute to the great bravery of all the crews.

So heavy were the losses suffered by the Battle force that on May 13 the only operation was by 226 Squadron which tried to block the road at Breda. On May 14 ten aircraft from 103 and 150 Squadrons attacked pontoon bridges at Sedan, surviving because enemy fighters were not around. Later that day the entire AASF was thrown into the attack on the bridges. This time fighters were waiting and of over sixty Battles sent thirty-five failed to return. No operations were flown in daylight the next day.

By now the AASF was being forced to retreat and only small scale operations were possible until more consolidated positions allowed the beginning in earnest of night attacks on May 20.

On June 3 the Battles retreated to bases around Le Mans from which they continued to harass the enemy troops. On June 13 they delivered some heavy day raids on troops along the Seine and Marne. Bravely the squadrons fought on until June 15, when all serviceable Battles were ordered to retire to Britain, there to help in the re-establishment of 1 Group. Nos 12 and 142 Squadrons finally gathered at Binbrook and operated again from Eastchurch, 88 and 226 at Sydenham in Northern Ireland, 103 and 150 at Newton.

Avions Fairey built eighteen Battles with Merlin III engines for the Belgian Air Force. They equipped Nos 5 and 7 Squadrons of the 3rd Group based at Evere. A distinguishing feature was the long radiator cowl. Nine of the Belgian Battles figured in an attempt to destroy bridges over the Albert Canal on May 11, 1940, and six were shot down. At least one was captured intact by the Germans.

Crews for the 'new' RAF Battle squadrons came mainly from No 12 OTU Benson formed April, 1940, from Nos 52 and 63 Squadrons. They were joined by Polish personnel posted to four new squadrons, No 300, eg, BH-R:L5356 based at Swinderby, No 301, eg, P6567:GR:E based at Swinderby, No 304, eg, L5044 based at Bramcote and No 305, eg, L5050, also based at

Bramcote. Together with the RAF units, 300 and 301 Squadrons began an offensive against barges being assembled in the Channel ports for the invasion of Britain until October 15/16, 1940, when the last Battle bombing raids were flown by Nos 12, 142 and 301 Squadrons. On that night 12 Squadron sent L5399 and L5076.

This was by no means the end of front line service for the Battle, for 98 Squadron operated with 15 Group of Coastal Command from Iceland on reconnaissance flights around its shores, and Nos 88 and 226 Squadrons flew anti-invasion patrols along the north Irish coast until the late Spring of 1941. The South African Air Force also used them both in the Western Desert and in East Africa, Nos 11, 15, and 40 Squadrons being known to have operated them.

Although the Battle had been usefully serving as a trainer before the war it played an even greater part by 1940. The SFTSs had them and BGSs. The twin cockpit Battle (T) was mainly seen at 1, 7, 12 and 16 SFTSs. These aircraft had yellow under surfaces extending up the fuselage sides until late 1940 when the yellow was then terminated at the 65 degree tangent to the under surfaces. Black, red, yellow or sky individual letters /numbers were carried.

Formulation of the Empire Air Training Plan took place in September, 1939, and it was ratified in December. Under this the Dominions were to train aircrew in relatively safe airspace. Initially it was planned that primary training only would be given in Australia and New Zealand, after which crews would go to Canada. Eighty-three schools were to be established using 5,000 aircraft, of which 1,125 were to be Battles serving as attack trainers and target towing aircraft. In order to get the scheme started the first Battles were shipped to Canada in the autumn of 1939 there to serve as bombing and gunnery trainers. About 800 were in all despatched. Many changed their identity adopting large black RCAF serials on their usually yellow overall finish. Target tugs had black stripes either on their under surfaces or overall. R7439 had a Wright Cyclone GR-1820-G3B experimentally fitted, an insurance against the drying up of supplies and spares of Merlin engines. This prototype had for part of its life a Bristol turret amidships.

Battle deliveries to Australia began in the early spring of 1940. Nearly 400 were sent serving in similar roles to those in Canada. A later participant in the EATP Scheme was South Africa. Again Battles were despatched, to serve in the Air Schools. These were renumbered usually, this time in the South African Air Force system.

Below: L5598, the prototype Battle target tug. In this original finish it is black and yellow overall and has a very small fuselage serial. Underwing serials were black and white according to the striping pattern. Note the windmill on the fuselage side and the drogue box under the fuselage. Rear of the canopy is also modified as is the fuselage top just aft of the canopy. Bottom: 1639 a Battle target tower of the RCAF in overall yellow and black scheme. This has the usual control surface wire guards but no drogue box or winch, or rear canopy modifications.



Top: L5664:O-JQ of No 2 Anti-Aircraft Co-operation Unit seen flying in 1940. It has full target-tug modifications, brown-green/black-yellow scheme and tail control surface wire guards. It also features a blister on either side of the pilot's side windows. Above: R7365 (small serial) was a production Battle (T) and is pictured here in 1940 markings (Imperial War Museum).

In Britain Battle target-tugs came much to the fore in 1940. It is perhaps surprising just how many aeroplanes in Britain in that fateful year were providing target facilities—Battles, Queen Bees, Henleys—when live targets were so plentiful. But the key to British success rested much in use now as trainers, like K9435 of 10 BGS Dumfries. In 1941 it had B-1 on the fuselage in white, B ahead on the port and aft on the starboard sides. K9464, 'A1' ahead of the roundels, was a bomber converted into Battle (T) in 1940, wearing trainer trim.

With little effort one can produce a range of exotic coloured Battles for a model collection which could even include one of the 29 passed to Turkey in September, 1939, which wore Turkish insignia on their RAF camouflage.

But surely the most interesting additions would be conversions to depict the series of Battle test beds. Engines, armament, equipment—all were tested on Battles. N2234 mounted a Merlin XII with a chin radiator. A similar fitting was also a feature of the Rolls-Royce Exe test bed, K9222, also bearing bomber camouflage. Merlin Xs were tested in K9257 and N2058 and the Peregrine in K9477. Fairey used K9370 in 1939 to test fly the Prince double engine which drove two propellers. Napier fitted the Sabre in two Battles which had fixed undercarriages to help compensate for the greater weight of the engine. Whereas N2234 wore bomber camouflage the Sabre Battle first emerged in 1939 in silver finish. Like the second machine, L5286, conversion of which was completed in March, 1941, at Luton, K9370 wore brown and green camouflage during the war, and had yellow under surfaces with fuselage 'P' marking. Sabre Battles flew about 700 hours, their slow noisy progress being quite a memorable sight. Another Napier test bed was K9240 which had a Dagger VIII.

As if these are not sufficient for kit conversions there is also presented a choice of radial engine test beds such as the Taurus TE1m K9331, or the Hercules II N2042 and N2184.

The last two Battles that I saw were L5776 and K7698. The former was at Colly Weston in July, 1944, coded HP-J in white (HP forward on the port side, aft on starboard) and still wearing TT stripes on the under surfaces.

It was used in connection with the development of gun sights as a TT machine. The month in which I saw it was that when the Battle was declared obsolete. K7698 was intact at Farnborough until at least 1947. It was green and brown and had yellow under surfaces and prototype marking. Fitted with a Merlin III it had endured trials with anti-aircraft mines in 1939-40, and finished its days being used for fire extinguishing tests at RAE.

Michael J. F. Bowyer

Part 3: The Carden-Loyd Carriers

THE first of the Carden-Loyd series of carriers were described last month. This month we continue with the remainder of the series and special variants, keeping as far as possible in chronological order.

Carden-Loyd, Carrier, Machine Gun, Mark VIa: Two experimental machines (B11E1 and B11E2) were fitted with 25 hp Armstrong-Siddeley air-cooled engines and delivered during 1930. These were similar to the standard Mk VI vehicle in size, but were about 12 cwt heavier, their total weight being 1 ton 18 cwt. The exhaust system was trunked in and the crew were protected from the heat of the engine. The hull was of mild steel plate 9 mm throughout. The front, back and side superstructure plates were sloped and heightened to protect the crews' heads, and an access door was fitted in the front glacis plate. Alterations to the suspension included provision of two return rollers with rubber tyres instead of the normal fixed rail guard, heavy duty tracks, and idler wheel. Extension mudguards were fitted to the rear wings. One of these machines, B11E2, was sent to Egypt for trials. During 1931 a further vehicle with an improved type of air-cooled engine was produced. This carried the designation Mk VIa (B11E7). The two experimental vehicles B11E1 and B11E2 and the Mk VIa (B11E7) were all subsequently classified under the designation Carrier Machine Gun Mk VIa.

Carrier, Machine Gun, Mark VIb: Ten machine gun carriers with air-cooled engines were built by the Royal Ordnance Factory in 1932 (T.908-T.917). These were an improved type of Mk VIa and were, in fact, at first known as 'Mk VIa, Improved Type'. This was later changed to Mk VIb. These vehicles were fitted with a modified exhaust system, intended to reduce the noise and fumes. The superstructure was again modified to increase the protection for the crew, and a modified form of machine gun mounting with shield was fitted, the machine gun tripod being carried at the rear of the vehicle. The suspension was also altered, the rear idler wheels being lowered to give a longer track contour which relieved the tendency to pitch. Five of these vehicles were sent to Egypt for trials.

Carden-Loyd, Carrier, Machine Gun, Mk VI*: Similar to models Mk VIa and Mk VIb, this model had complete overhead covering, consisting of hinged flaps that opened to the front and rear. An access door was fitted in the rear of the



Carrier, Machine Gun Mk VIa showing heightened superstructure.



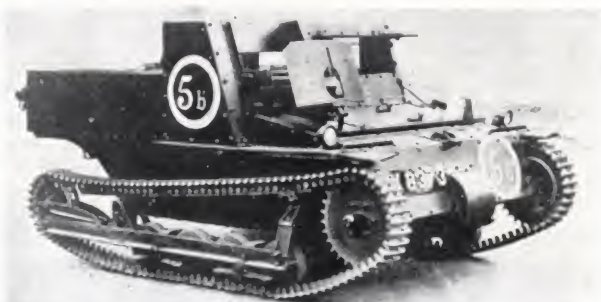
vehicle. Modified versions were exported by Vickers to Siam, Bolivia and other countries under the (Vickers) designation 'Mk VI*, Light Armoured Vehicle'.

Carden-Loyd, Mk VI, with Armoured Tops: This version had two pyramid shaped hinged head covers covering the fighting compartment but was otherwise similar to the standard Mk VI. Built in 1930 this version was supplied to various countries, including Siam, USSR, Japan and Italy. One model was also supplied to the Air Ministry in 1931.

Carden-Loyd, Carrier, Machine Gun, Mk VI, Experimental (B11E6): This version, built in 1929 (T.608/MT.9905) was basically the Mk VI with a modified superstructure and heavier and wider track, with the addition of two return rollers instead of the normal fixed rail guide.

Carden-Loyd, Carrier, Machine Gun, 3-Man: This was an experimental machine (T.991/B11E10) built during 1933, having a heightened superstructure and adapted to carry three men. The suspension was similar to that of the Mk VIb but with only one return roller. The exhaust system was placed outside the machine on the left, running from the front of the vehicle to the rear. Details: Crew, 3; Armament, 1 Vickers .303 machine gun; Engine, Ford 24 hp water-cooled; Speed, 18 mph.

Carden-Loyd, Carrier, Machine Gun (Infighter): Nicknamed 'Infighter', this vehicle (T.253/MK.8373) was modified



Above: Known as the 'Infighter', this experimental type was distinguished by its added armour and raised front and sides. In 1930 by having a heightened armoured front and sides enclosing the crews' compartment. A modified machine gun mount and armoured shield was also fitted, the idea being to produce better crew protection against small arms fire for close fighting. It did not become a production type.

Carden-Loyd, Carrier, Smoke: This model appeared at the same time as the Mk VI. Basically similar to the machine gun carrier, this version was fitted with smoke-producing equipment, the smoke being discharged from a pipe fixed to the rear of the machine. A small batch of these machines was built.

Carden-Loyd, Carrier, 3 inch Mortar: This machine was similar in design to the Mk VI machine gun carrier, but had a 3 inch mortar mounted on the left of the front deck for close-support work with light tanks. The mortar could be fired from the vehicle, but was usually dismounted for firing. Details: Crew, 2; Armament, 3 inch Stokes Mortar; Engine, Ford Model T, 22.5 HP; Max road speed, 25 mph; Weight, 1 ton 7 cwt.



The standard 3 inch Mortar Carrier version of the Carden-Loyd Mk VI.

Other variants of mortar carriers existed, however. One version, a normal Mk VI, had the front superstructure altered to allow the infantry mortar, baseplate and bipod to be stowed on the front deck. In the re-arranged compartment 72 mortar rounds were carried. A later version, built to carry a 60 mm mortar, had an armoured roof half-way across the crews' compartment; this was flush with the vehicle sides. The mortar was carried in a box fixed to the front of the vehicle, other equipment being stowed inside the vehicle.

Carden-Loyd, Carrier, 47 mm Gun: This was an adaptation of the 47 mm Infantry gun to the Mk VI carrier, the gun and shield being mounted on the front of the vehicle. The mounting was of a special type and could be modified to take any gun of the approximate size of the 47 mm gun. Number of 47 mm rounds carried was 100.

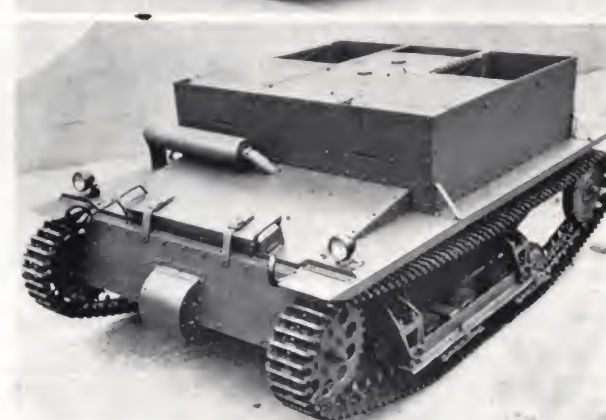
Carden-Loyd, 3.7 inch Howitzer Tractor: This was the Mk VI with armament removed, adapted to tow a tracked trailer on which was carried a 3.7 inch Howitzer.

Carden-Loyd, 20 mm Gun Tractor: This was the Mk VI mortar version, with the mortar removed, the vehicle being used as a tractor to tow a tracked trailer containing four men and equipment. Behind the trailer was towed the 20 mm (0.8 inch) Oerlikon gun which was carried on a tracked mount. The object of this combination was to obtain an effective anti-tank gun and crew which could be easily transported across country.

It must be remembered that at this period, the early 'thirties, spending on military equipment in Britain was very limited indeed and only very small numbers of these types were built for troop trials.

Part 3 of Paul Leaman's Fokker Triplane series (the last instalment) appears next month, as does Part 3 of 'Panzer Uniforms'.

September, 1969



Top to bottom: The Carden-Loyd Mk VI with Armoured Tops. Carden-Loyd Mk VI*; vehicle shown was an export model for Siam. Carden-Loyd Mk VI modified as a 60 mm Mortar Carrier. Carden-Loyd Mk VI 20 mm Gun Tractor showing crew trailer. Carden-Loyd 3.7 inch Howitzer Tractor (All photos, Imperial War Museum).

NEW

KITS AND MODELS

TWO BY IMAI

LAATEST military kits to come to us for review are a matching pair of models by the Japanese firm of Imai. Scaled at 1:24, they are the 13 ton High Speed Tractor M5 in one kit and a 155 mm 'Long Tom' gun in the companion kit. The M5 tractor can tow the 155 mm gun and each kit can be bought separately. At the time of writing we are just assembling the M5 kit which is very nicely detailed, certainly the most accurate we've yet seen from this firm. Obviously making use of official drawings, the manufacturers have made a splendid job of the moulding. Even the .50 cal machine gun is a masterpiece of detail moulding. The instruction sheet is easy to follow and the motor and gearing follows the usual Japanese style with two torch batteries (not supplied) needed as a power source. These batteries are concealed in the engine compartment of the model. A gimmick we would be happier without is cam-operated steering, however.

The 155 mm gun is a first-class model, non-motorised of course, but with many moving parts so that it can be rigged for road running or emplaced for action. A most impressive feature is the geared hand traverse and elevation actually worked by handwheels as on the real thing. Nylon gear wheels are provided plus the necessary metal rods and brass bearings. The two models together make a most imposing combination. The M5 kit costs 39s 6d and the 155 mm gun costs 25s. These prices are most reasonable for two very good and highly detailed models. Jones Bros of Chiswick supplied our samples and hold stocks. Postage is extra. C.O.E.

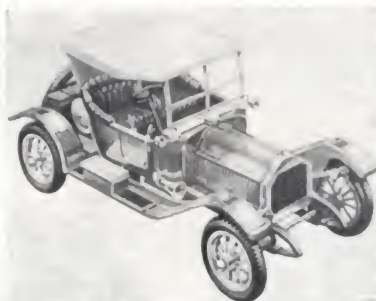
AND ANOTHER

ANOTHER Imai model we've had for review has been available for about a year to our knowledge. This is a replica of the Soviet Scud missile on its JS-type carrier, chassis, virtually a missile carrying version of the Stalin tank. We featured an Airfix conversion of this equipment in our July 1967 issue. The Imai model is nominally to 1:24 scale and in theory would make an interesting addition to any large-scale tank model collection. Unfortunately, however, Imai have obviously made this kit entirely from pictures without, it seems, even bothering to get the JS chassis dimensionally correct. Hence while the model is recognisable as a Scud any dimension accuracy is co-incidental and the proportions are a little woeful. It is motorised in the usual Japanese style, complete with Mabuchi motor. Unless you really want a

Scud model we would commend you spend the money on one of the much more accurate kits plentifully available, like Imai's 155 mm gun reviewed above. Our Scud sample came from Jones Bros of Chiswick. Price is 33s. 9d. C.O.E.

MICROSTRIP

DESPITE its usefulness, Slater's Microstrip is still not widely available through model shops if our postbag is anything to go by. For those who don't know, Microstrip is finely sliced plastic card ranging in width from about 1 mm to 3 mm and in thickness from 10-40 thou. Its uses are legion, needless to say, particularly in conversion work, and it is frequently mentioned in our pages. Any modeller who needs Microstrip can now get it by post from Jones Bros of Chiswick who hold ample stocks. Since we last reviewed Microstrip, its price has stayed at 5s 0d a packet, and since a packet lasts a long time this is still a very reasonable price for such handy material. Another new product by Slaters, who make Microstrip, is a packet of plastic moulded cylinder flanges, a dozen assorted sizes for 2s 4d. Complete with rivet detail, these will be most handy for anyone modelling in larger scales—diameters range from 3/8-1 inch—though there are other uses for these which suggest themselves, for instance, turret rings for OO size tanks. At the modest price a packet is worth having. These are also



New from Lesney in their Matchbox 'Yesteryear' series is this splendid 1:48 scale replica of a 1914 Stutz. Priced at 5s 4d it goes very nicely with 1:48 scale 'vintage' aircraft models. The colour—metallic red—is a little non-authentic for its period however, but most of these 'Yesteryear' models can be enhanced with a touch of paint anyway. Released at the same time is a 1907 Peugeot scaled at 1:43, equally excellent. Other recent Matchbox models include a very attractive Mercedes truck with a load of scaffolding (1:91), a Mercury Commuter station wagon (1:70), and a field car (1:64), all priced at 2s 4d each.

stocked by Jones Bros. Postage is extra on the prices quoted. Also available is a packet of smaller flanges, 3/8 inch diameter and less at 2s 8d a packet. C.O.E.

APOLLO MODEL

WITH the lunar landings recently in the news we've had a chance of examining, but not making, an imposing new kit by Monogram of the Saturn-Apollo complex, the complete multi-stage rocket, less launching pad and gantry, and the Apollo capsule. This comes in a giant box at a giant price of £4 17s 6d. Scaled at 1:144 it makes a monster contrast with giant airliner models to the same scale—which it dwarfs with no effort. The assembly of this kit is perfectly straightforward aided by a large instruction book which also contains much information on the Apollo programme. Jones Bros of Chiswick hold limited stocks of this very large kit and loaned us a sample to look at. C.O.E.

NEW CATALOGUES

AMONG recent kit catalogues we've received is a lavish new edition of the Heller offering which is beautifully produced in colour throughout. As well as illustrating long-established favourites like the Musée range there are some interesting new items scheduled for release soon. The Anglo-French Jaguar is to appear in both fighter and trainer forms at 1:50 scale and the SA 330 helicopter is promised in the same scale. Among new ship kits will be the battleship *Potemkin* and the cruiser *Aurora* of Russian Revolution fame, both at 1:400 scale. Additionally, Heller announce that they will be producing tank kits in 1970 starting with an AMX 30 and an AMX 13, both at 1:32 scale. This catalogue costs 2s 11d, postage extra, and includes a loose-leaf insert giving Heller kit prices in Britain. Monogram have also produced a new catalogue illustrated throughout in colour, but it does not reveal any new models for future release and, in fact, even the most recent Monogram releases are not included. This costs 3s, post free. Lastly there is a new printing of the Tamiya catalogue, very much as before but with an extra page showing the new 1:100 scale aircraft range, plus the most recent Tamiya tank releases up to the 1:35 scale Panther reviewed last month. This catalogue costs 3s, postage extra. All these can be had by post from Jones Bros of Chiswick. C.O.E.

Continued on page 36

AIRFIX magazine

MODEL TOYS

PLASTIC KIT SPECIALISTS—ASSOCIATE MEMBER I.P.M.S.

MONOGRAM	Mig-21D (All Weather)	1/72	16/6	KI-100	1/72	5/-	W. Lysander	1/72	4/3
AH-1G Huey-Cobra Helicopter							M.E.410	1/72	4/3
team, 2 kits together	1/72	24/-					W. Wessex Mk. 1	1/72	4/3
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G.HU-16B Albatross	1/72	24/-					B. Blenheim Mk. 1	1/72	6/-
B-52D Stratofortress	1/72	239/6					Heinkel H.E.219	1/72	6/-
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A7M Reppu (Sam)	1/72	5/-							
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G3M3 Nell Bomber	1/72	24/6							
TAMIYA									
A6M3 Hamp Mod 32	1/72	5/11							
KI-84 Hayate (Frank)	1/72	5/11							
KI-44 Shoki (Tojo)	1/72	5/11							
J7W1 Shinden canard	1/72	5/11							
J2M3 Raiden (Jack)	1/72	5/11							
FROG									
EE-P-1 (Lightning Prot)	1/72	4/3							

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1/72 SCALE
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The first release from an entirely new Italian manufacturer in what promises to be an exciting 1/72 series. 32 cleanly moulded parts go to make up this excellent model, which has nice surface detailing, and a particularly well done undercarriage assembly. Alternative decals included for the Reggia Aeronautica, Co-Belligerent Air Force, R.S.I., and Luftwaffe.

PRICE 11/9

Reviewed in last month's issue.

LETRASET DRY DECALS

Additions to range, now in stock as follows:

M.17. 1/72 Italian A/F WWII Upper and Lower wing Fences.
M.18. 1/72 Italian A/F WWII Squadriglia, Stormo and Gruppo markings.
M.19. 1/72 Italian A/F WWII Code numbers in Red, Black and White.
M.20. 1/72 Luftwaffe Code numbers and Letters, Red, WWII.
M.21. 1/72 and 1/48 USAAF Code letters and numbers, black, WWII.
M.22. 1/72 U.S. National Insignia, 1921-22, 1943-47.
M.23. 1/48 USAAF markings for P-47 and P-51, WWII.
M.24. 1/72 USAAF markings for P-47, P-51, and P-38 WWII.

All previous numbers (1-16) available from stock also, in this really splendidly realistic looking decal form. Price for all sheets: 7/- each, postage on all decals, up to 3 sheets, 6d, 4 sheets and over, 9d.

Decals in stock from ABT, Almarks, Authenticals, Exact-a-cal, De-Frey, Stoppel, AIR, Micro-Scale.

REFERENCES FOR THE MODELLER

Japanese Army Air Force Camouflage and Markings WWII. 52/6. Post 1/-.
Military Aircraft Recognition, by J. W. R. Taylor. 5/-, Post 1/-.
Pictorial History of the RAF. Vol. 2. 35/-, Post 1/-.
How to go Plastic Modelling, by Chris Ellis. 25/-, Post 1/-.
Good stocks held on Profile Publications, although many are still out of print, postage on all Profiles: 1 copy 6d, plus 3d each add. copy. We shall be stocking the resumed series of Aircraft Profiles, due to recommence with No 205, B-17G, during September. As with the resumed Armour series, these will cost 5/- each, are to a larger format and will have 24 pages.

Due anytime now in the Men and Machines series, are the following, all priced at 30/- each, and 1/- each postage: Luftwaffe Bombers Vol 2, Japanese Bombers Vol 1, and British Fighters Vol 1. Earlier releases in this series all available from stock.

Latest Aircom release: Griffon engined Spitfires, Mk. XIV-F.24. 21/-.

All Aircoms in stock, all at 21/- and 1/- each postage.

MODELDECAL DECALS No 1. Six alternative RAF BAC Lightnings. 1/72.

F.Mk2. XN790 "E" 92 Sqn.
F.Mk2. XN778 "F" 19 Sqn.
F.Mk6. XR764 "L" 5 Sqn.
F.Mk6. XS937 "C" 23 Sqn.
F.Mk6. XS921 "M" 74 Sqn.
F.Mk1A. XM175 "E" 56 Sqn.

Also revised fin emblem for Airfix kit of F.Mk1A. XM192 "K" 111 Sqn. Complete with illustrated instruction sheet. Price: 7/6 (UK postage 6d).



Illustrations show two views of Airfix kit modelled as XN790 of 92 Sqn.

WRITE, PHONE OR CALL IN. Shop Hours 09.30 - 17.30 Mon. - Sat. Closed Weds.

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New Kits—continued

NEW RATIO WAGONS

FROM Jones Bros of Chiswick we have received samples of the two latest Ratio 4 mm scale plastic wagon kits. In our opinion these are the best yet. They are both bogie vehicles; one a LMS ex-Caledonian Railway, Bogie Ore Wagon (price 16s 10d) and the other a GWR Bogie Bolster A, otherwise known as a 'Macaw G', (price 14s 11d). They each have the correct type bogie and are supplied with wheels and couplings.

The finely detailed parts are cleanly moulded with no flash and they fit together



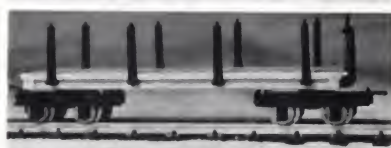
Above: Caledonian Bogie Ore Wagon and GWR 'Macaw G' Bogie Bolster Wagon, both from Ratio kits.

with perfection. The instruction sheet is explicit and no difficulty was experienced during assembly. We particularly like the couplings (which are of the Tri-ang type)

and the method of pivoting the bogies. Both wagons are capable of traversing sharp radius curves and because they are no more than six inches in length, three link couplings can be fitted to the buffer beam in place of the Tri-ang variety without fear of buffer locking. Highly commended for railway modellers and very reasonably priced for the excellent quality offered. N.S.

PLAYCRAFT—EGGER-BAHN

PLAYCRAFT have supplied us with samples of some of the former Egger-bahn rolling stock which is now included in the Playcraft HO9 narrow gauge range. They are offered at a fraction of the former Egger-bahn prices but there is no falling off in the high standard of workmanship and finish we had learned to expect from Egger. We received the P12 Steam Tank Loco, black and blue with smoke-stack chimney, price 51s, P11 Diesel Works Loco, price 46s 6d, P13 Articulated Steam Railcar, price 61s, P22 Goods Van, brown and short wheelbase, price 6s 3d, P24 Proprietary Goods Van, white 'Kaiser Friedrich Mineral Waters' with end cabin, price 9s 9d, P25 Dropside Goods Wagon in brown with long wheelbase, price 6s 3d, P26 Bogie Flat Wagon, price 9s 9d 2nd/3rd Class Coaches; P41, brown with open end verandahs, price 9s 3d and P43, dark blue four compartments, price 9s 9d, and P42 Luggage Van, brown and one end verandah, price 9s 3d. They are all beautifully detailed, and excellent runners and splendid value at these new prices. N.S.



Top to bottom: Diesel Works Loco, 2nd/3rd Class Coach, Bogie Flat Wagon, Articulated Steam Railcar, all ex-Egger-bahn models now re-released in the Playcraft Narrow Gauge range at lower prices.

German Horse-drawn Transport—from page 27

Trailer for MG-Wagen

First make up a solid block of balsa to the dimensions shown in Fig 3; I used three strips stuck together. The top should be cut to the form of a very shallow inverted 'V'. Now cut a piece of thin card just big enough to overlap all round, to form the limber lid. Score it carefully down the middle to allow it to bend and glue it down to the top of the balsa block. On top of this place a shaped chock of wood as shown, with two machine gun barrels on top; the Airfix .5 inch gun is excellent if you first discard 2/3 of the long barrel.

Next, take a gun-carriage and cut off the trunnions to provide a flat base for the limber body (Fig 3). The trail must be shortened by 1/2 inch and also turned upside down so that the towing eye is at the bottom. Care is needed with this operation to ensure that the truncated trail does not slant and to make a firm joint; the first one I made collapsed while on active service!

When everything is thoroughly dry, glue the limber body on to the carriage where the trunnions used to be and add the wheels. As with the *infanteriecarren* a padded scrap of cloth is glued over the gun breeches to represent the canvas cover, the barrel ends being left exposed. The completed vehicle should be painted dark-grey with a blue-grey canvas.

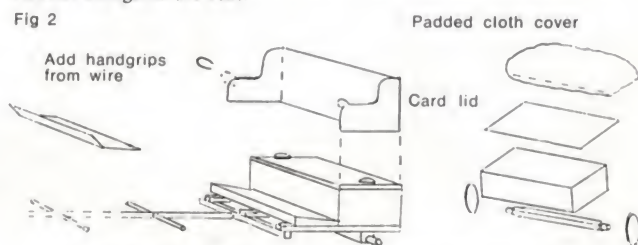
Leichter Fernsprechwagen

The signals sections were equipped with landline field telephone equipment since divisions were not envisaged as being mobile. The driver's limber is similar to that of the *MG-Wagen* but the trailer is more complicated and its construction can best be seen by reference to Fig 4.

The basis is again a Civil War gun carriage but modified as shown in stages 1-4 and built up with a balsa platform on which is placed a canvas-covered box. The balsa body has a full-width canvas-covered box across its front half, the rear half being occupied with a seat facing backwards and made up in the same way as that

for the driving limber. A double footboard is fitted at the rear and long rods (more 5 amp wire) project backwards at 45 degrees to the vertical alongside the seat.

Fig 2



Leave 1/2 inch stump
Discard dotted section



Dimensions of balsa block:
9/16 inch long, 3/8 inch wide, 5/16 inch deep



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CRA.1 Artillery Officer, in action **
CRA.2 Gunner with ball, in action **
CRA.3 Gunner with rammer, in action **
CRA.4 Gunner with match, casual **
CRA.5 Gunner with rammer, casual **
CRA.6 Gunner with match, in action **

BRITISH ARMY

ARTILLERY

CB.12 Drummer advancing playing **
CB.13 Fifer advancing playing **
CB.14 Officer with drawn sword **
CB.15 Private marching **
CB.16 Private in forage cap marching with shouldered arms **
CB.17 Private standing firing **
CB.18 Private advancing with bayonet fixed **
CB.19 Private defending himself with rifle **

INFANTRY in spiked helmets

except where stated
CR.11 Officer walking *
CR.12 Officer advancing with sword drawn *
CR.13 Private marching *
CR.14 Private standing firing *
CR.15 Private standing on guard *
CR.16 Private lunging with bayonet *
CR.17 Private standing at the ready *
CR.18 Private falling dying *
CR.19 Private clubbing with rifle *
CR.110 Private in soft cap firing *
CR.111 Private in cap marching *
CR.112 Private in soft cap lunging with bayonet *

HUSSARS

CH.1 Officer leading charge with drawn sabre ***
CH.2 Trooper charging leaning forward sabre in hand ***
CH.3 Trooper charging leaning slightly forward sabre in hand ***
CH.4 Trooper charging sabre in hand ***
CH.5 Trooper charging leaning back with raised sabre ***
CH.6 Trooper charging sitting upright with sabre raised ***
CH.7 Lord Cardigan charging sitting upright, sabre raised ***

BRITISH ARMY

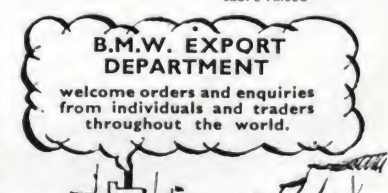
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CB.11 Standard bearer with sword **

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photoPAGE

More rare pictures from readers with captions by Michael J. F. Bowyer. A free Airfix kit is awarded for every picture published, but please note that there is usually a delay of some months before publication due to the limited space at our disposal.



Key: (1) Into the drink goes Barracuda II LS796:1Q after apparently striking its tail on the round-down while landing. Code is in yellow and the spinner is white. Can anyone identify the squadron? Carrier seems to be a 'Glory' class ship which would date the scene as 1945.



2



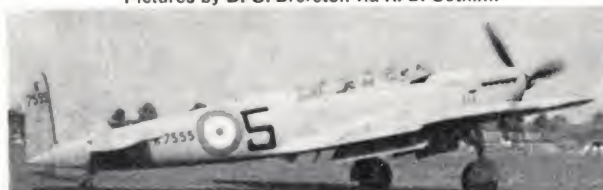
3

Key: (2) Seafire III LR817:P-5H just about to hit the catwalk in a heavy landing aboard HMS *Ravager*. Codes and spinner are white. Anyone know the date or the unit? Picture by A. Watkins. (3) Liberator KL506/G:C of 160 Sqn in 1944 in grey/white maritime finish with SEAC roundels. Location: Ceylon. Picture by N. Dolphin.



5

Key: (5) Venom FB1 WE469:0 with (6) WR359:V both of 45 Sqn RAF operating from Butterworth, Malaya, in action against Communist terrorists during 1955. Colour scheme is dark green/dark grey with azure blue undersurfaces. Tip tanks are dark blue with white tips and stripe and a red winged camel emblem in the middle. Squadron marking is a white dumbbell in a red rectangle. Note the 250 lb bombs on aircraft V. Pictures by D. G. Brereton via K. B. Cothliff.



7

Key: (7) The Fairey P4/34, K7555, forerunner of the Fulmar, at the 1936 Hendon display. It is yellow overall with black 'exhibit number'. Picture by Ian Cogger. (8) SAAF Anson I, 1133:F, of No 33 (Operational) Flight, Wingfield SA, in 1940-41. It is in dark green/dark earth/sky finish with white code. (9) Marauder H????:H of No 21 Sqn SAAF in late 1944-45. Note white tail tip. Colour appears to be dark green/dark earth (or grey)/sky. Pictures by D. Becker.



Key: (4) Hangar scene aboard HMS *Ravager* in 1944 with Fulmars, Hellcats, Avengers, and Barracudas all in evidence. Picture by A. Watkins.

4



6



8



9

New Books—from page 12

wary. It is all rather meaty stuff and perhaps beyond the average kit-basher's aspirations but such heights are worth striving for and this book does show the way.

Observer's books

OBSERVER'S BOOK OF AIRCRAFT, 1969, by William Green. Price 7s.

OBSERVER'S FIGHTING VEHICLE DIRECTORY, by Bart Vanderveen. Price 27s. Both published by Frederick Warne & Co, 1-4 Bedford Court, Strand, London WC2.

LATEST edition of William Green's ever useful pocket book for the aircraft enthusiast follows his usual format, packed with pictures and specifications, plus silhouettes of all the latest types in service or soon to enter service. It needs little more commendation to us except to say that as always it remains an invaluable and handy record of the latest in aviation, still splendid value even at a slightly increased price this year.

Bart Vanderveen's book fills a very large gap in the list of existing reference books for military enthusiasts. Though there are several tank books, this is the first really comprehensive book devoted to wheeled transport and support vehicles, in other words trucks and 'soft skin' types. It is very well produced with nearly 900 pictures arranged by type and country, superb value for its very modest price. Packed with facts and figures it is an essential buy for any military modeller and enthusiast. We feel that the title is, perhaps, a little misleading. 'Military Vehicles' would have been more descriptive, since only a few tanks and armoured cars (the true 'Fighting Vehicles') are included and the bulk of the book is devoted to trucks and special service types on truck chassis. This is a minor point, however, in a book not to be missed.

For spotters

MILITARY AIRCRAFT RECOGNITION. Price 5s.

CIVIL AIRCRAFT RECOGNITION. Price 3s 6d.

Both by John W. R. Taylor. Published by Ian Allan Ltd, Terminal House, Shepperton, Middx.

TWO more 'hardy annuals' in their latest 1969 editions, both of these ever-useful and modestly priced little books will be snapped up by the aviation enthusiast. The format is as before with brief histories, good pictures and silhouettes, though minor types do not get silhouette coverage. In the 'civil' book, main emphasis is on types likely to be seen in Britain, though there is also a section on the most important types which includes aircraft not necessarily familiar to British eyes. The 'military' book has wide coverage for its pocket size with more than 80 packed pages of entries, including a surprising number of 'old-timers' still flying. Great value for money.

Wargame guide

DISCOVERING WARGAMES, by John Tunstall. Published by Shire Publications, Gubblecote Cross, Tring, Herts. Price 4s 6d.

FOR a modest sum, here is a handy little book useful for anyone who needs a guide to wargames for the complete beginner. It packs in a great deal of information and ideas and has lots of good explanatory diagrams plus several pictures. This is good value for

Reader V. A. Lukoianov sent us this excellent view of the Russian supersonic airliner, the Tu-144, at Sheremetevo Airport refuelling for a test flight.



September, 1969



Above: A Hawker Siddeley Harrier VTOL jet fighter landing on the flight deck of the cruiser HMS *Blake* during trials on August 2-3, 1969. This was the result of a directive by the Ministry of Defence for the Navy to study the application of the Harrier for operations from ships in the mid 1970s. The aircraft was flown from Dunsfold to HMS *Blake* which was operating just off the Isle of Wight. This was the first occasion that the Harrier had landed on a Royal Naval cruiser, and is perhaps a pointer to the future of naval air power (MoD photo).

money, but wargaming for the modern period is dismissed fairly briefly, main coverage being devoted to 'horse and musket' fighting and earlier. Additional references given are fairly sketchy being confined, it seems, only to publications with which the author is connected and making no mention of other useful books and publications.

Books to come

IMPORTANT new book of interest to aircraft enthusiasts is *Fighting Colours* by Michael J. F. Bowyer, to be published in October by Patrick Stephens Ltd. Based on the AIRFIX magazine series of a year ago, it includes much extra new material bringing the story from 1950 to the present, with extra material in the earlier sections. There will be 157 pictures, 28 pages of drawings, and comprehensive appendices which include listings of RAF fighter serials, squadron codes, specifications of RAF fighter types, post-war squadron markings, and diagrams of roundel dimensions and other markings.

Arms and Armour will shortly be publishing *British and American Tanks of World War II* by Peter Chamberlain and Chris Ellis, a large reference book covering all British, American, and Commonwealth built tanks, SP guns and variants of 1939-45. Complete with development histories, there are more than 560 illustrations and 224 pages.

'BATTLE OF BRITAIN' PRINTS

NOW available from Battle of Britain Prints International Ltd, 13 New Plaistow Rd, London E15, is a set of prints in colour (one of which is this month's cover) of shots from the new *Battle of Britain* film.

The set of 8 prints, each 17x23 inches, are full colour printed on varnished board. They include a Spitfire, Hurricane, Messerschmitt 109, Heinkel 111, and montage prints of formation shots, dog fights, scenes from the film and actors etc.

Selling price is 7s 6d per print or 50s for the set of 8 boxed in a container with an illustrated sheet about the making of the film.

Letters to the Editor

Planked Card

FURTHER to Chris Ellis's article on Austin truck conversions readers may be interested to know of Slater's 'planked card' which is ideal for the GS body saving the need to score ordinary card. Also with only minor modifications the K2 3-ton truck can be converted into a 'reasonable' German Opel thus with the one kit both armies can be equipped with soft skinned transport. Alan B. Yuill, Edinburgh 11.

Mesh effect

WHEN I converted the Sd Kfz 7/1, in the September 1967 AIRFIX magazine, I discovered a very simple but effective method of constructing the cumbersome sides.

I took a rectangular piece of fine mesh nylon stocking, 43 mm by 8 mm, and glued on either side of each edge a 2 mm wide strip of plastic card or Microstrip. This can be done with 10 or 15 thou plastic card. I then made the uprights in a similar fashion, as with the tailboard. I cemented the sides in position, but they can, if required, be fitted with pegs (from sprue) as described in the article. I found that this produced a far neater and more accurate effect.

D. J. Cooke, Tonbridge, Kent.

'Wood' finish

I WOULD like to tell readers of a very realistic wood finish which I have discovered. While painting the Airfix Moto-Race Press Box in Humbrol 26 (Matt Khaki) I laid my brush down as some paint dripped on to the unpainted roof. I grabbed a tissue and wiped it off, noting that a very nice 'light oak' covering colour remained where the paint had been. I therefore wiped the newly painted sides with tissues and this left me with a lovely 'wood' finish like a garden shed. This is obviously a very effective way of getting a 'wood' finish on any light coloured plastic.

X. Morden, Surrey.

In the excitement, our reader forgot to sign his name! However, the sample piece of plastic he sent us, painted in the manner described, then wiped over with tissue, certainly bears out the effectiveness of the method—EDITOR.

Car upholstery

I HAVE found a most successful way of obtaining a realistic upholstery finish on the interior of cars. I just mix talcum powder with my paint. Any sort or brand will do.

C. Voce, London SE18.

Duck details

I HAVE recently bought the excellent Airfix kit Grumman Duck. I at once started to read the pages about it in *War Planes of the Second World War*, Vol 6, and on page 179 I found a photograph of just that example which Airfix have used as a pattern. Here I saw that the number '131' on the transfer sheet is about half the size it should have been. Moreover, the anti-dazzle panel seems to have a lighter colour than black, perhaps Olive Drab?

Letters to the Editor selected for publication entitle the senders to each receive a free Airfix plastic construction kit of their choice. We are always pleased to receive your comments and pictures, which will be considered for publication. Submitted material and pictures can only be returned if accompanied by a stamped addressed envelope, and the Editor cannot accept responsibility for safe keeping of any such contributions, neither does he necessarily agree with comments expressed by correspondents in the letters columns. Please note that any letters anticipating a reply MUST be accompanied by a SAE or stamp.

Another transfer comment: The blue of the Finnish roundels in the MiG 21 kit is too dark.

Kai Willadsen, Slagelse, Denmark.

Lightning markings

WHILST looking through the June issue of AIRFIX magazine I spotted two minor inaccuracies in Jim Britton's lightning T5 model. Firstly, in the nose markings, there should be equal widths of white either side of the red uprights. Secondly, the Lightnings of 226 OCU have not carried the yellow trainer markings for several years, and all aircraft at the OCU are silver overall.

In reference to the Modeldecals' Lightning sheet, a visiting aircraft was a Mk 6 of 92 Sqn featuring red and yellow checks either side of the fuselage roundel, and a gloss dark blue fin and spine. This carried a sloped RAF flash outlined in white, a white aircraft letter, and 92 Sqn emblem in a white circle. This aircraft was XN77Z:K which had probably been converted from the Mk 2. I hope that these few details will help modellers using the Modeldecals sheet.

David Farrow, Norwich.

Mr Britton's model did, in fact, depict the finish of a few years ago; we didn't have room to include this in the caption however.—EDITOR.

Eagle ship kits

FIRST I must congratulate Airfix on the excellent quality of their kits, and the mine of information and enjoyable reading in each issue of AIRFIX magazine. I look forward to my copy each month, and have done so from issue No 1.

I am thrilled to see the introduction at last of the Waterloo Series model soldiers, and I have no doubt a selection of these will find a place with my other showcase model collection.

My main reason for writing is to ask if any reader can help me? I have in my possession what I believe to be the complete collection of the former Eagle 1:1200 scale model warships, assembled and painted to exhibition standards.

Although HMS Hood, Rodney and Nelson were scheduled for release, I do not know if they were actually produced. I should be pleased to hear from any reader possessing this information or the models. I have been informed that the *Fuine* class Italian cruiser was not in fact produced.

E. G. Kay, Fishbourne, Sussex.

Maritime aircraft

WHY is it that Airfix has produced twelve USA naval aircraft into its range of models, and has not even one maritime reconnaissance bomber available? Most of the various aircraft of this type would not, I am sure, present any unsurmountable problems if they were chosen to be reproduced in model form, eg. a model of a Hawker Siddeley Shackleton (to 1:72 scale) smaller in size than that of an Airfix B29 produced to the same scale. Other aircraft such as the Orion, Atlantic, Neptune, Nimrod and Tracker, would I am sure make very interesting subjects for models.

One other thing I would like to say, is that if any reader would like the old Frog model of the DC 7C Seven Seas which has now gone out of production, they should contact me as some are still available in Singapore. The cost including postage would be approx 30s. These models are either in the markings of BOAC or SAS and the scale is 1:96. Only a limited number of these kits are available.

Richard Nunn, 340 Manston Road, RAF, Changi, Singapore.

Kits in Russia

I HAVE a small collection of aircraft models in which about 35 are by Airfix. I study the history of world aviation and collect kits as well as books, magazines, and photographs. I thought readers might like to know what kits are made in Russia.

There are only two firms in Moscow which make ranges of model kits. First is the 'Youthful Technician' range with the following models:

Tu-104	1:100
Il-18	1:100
Il-62	1:100
An-24	1:150
Yak-18P	1:50
Yak-25	1:50
Mig-21	1:50
Mig-19	1:50
Mi-6	1:100
Mi-8	1:50
Mi-10	1:100

All these are sold without transfers. Soon to be released is an An-10 (1:150) and Yak-40.

The second firm is Ogonek ('Light') who make a kit of the battleship *Protekin*, 1905, (1:500 scale) with 179 parts. This year the firm will be making the cruiser *Aurora* (1:500) and the atomic ice-breaker *Lenin* (1:500).

V. A. Lukoianov, Moscow, USSR.

Wagon chassis

IN the May 1969 issue, R. C. Milligan writes about the availability of Triang-Hornby wagon chassis. For those who do not have a copy of the spares list here are the details of the wagon chassis available:

- X.356 Standard wagon Chassis—spoked wheels
- X.357 Standard Brake Van Chassis—spoked wheels
- X.358 Long Wagon Chassis—spoked wheels
- X.359 Long Brake Van Chassis—spoked wheels



Above, left: Provost XS181:96 of the 'Cranwell Poachers' aerobatic team. Above, right: One of the 18 Sqn Wessex aircraft referred to in reader E. Taylor's letter on this page.

- X.511 Standard Wagon Chassis—disc wheels
- X.524 Long Wagon Chassis—disc wheels

Of these the short wheelbase chassis are about 2s 6d each, and the long wheelbase chassis about 3s 2d each. I hope this can be of some help to those wishing to buy Triang-Hornby wagon chassis.

J. R. Snowden, Esher, Surrey.

More museums

I READ with interest William B. Black's letter in the July issue. It may interest readers who may be visiting Edinburgh (during the Festival, perhaps?) of two museums which will no doubt provide added interest:

(1) Royal Scottish Museum, Chambers Street. The engineering section has many locomotive and ship engine model displays which can be operated by pushing a button. There are many fine sailing ship and 'men-of-war' models in the ships' section and there is a fine display of model aircraft upstairs. Entry is free.

(2) Scottish United Services Museum, Edinburgh Castle. This is ideal for military enthusiasts with its displays of uniforms, arms models and comprehensive collection of prints of uniforms. Entry is by a modest charge.

I heartily recommend a visit to both of these buildings.

Millar L. Gordon, Buckhaven, Fife.

1914 Highlanders

HAVING just read about the uniforms of the British Army 1914-18 in the July edition, I have been pondering over making Highland soldiers.

I now find that the 8th Army soldiers make some very good basic material for Highland soldiers. If the trousers are shaved away and replaced by a khaki painted strip of paper $\frac{1}{8}$ inch wide it produces a realistic kilt. (Note: it is best if the legs and stockings on the 8th Army soldiers are painted before attaching the kilt). If it is the early type of soldier, for the 1914 period, then his headdress would

Pen-friends

THE following readers have written requesting pen-friends. Would anyone interested please correspond with readers concerned direct at the addresses given:

Wieslaw Fuglewicz, Wroclaw 2, Lwowska 10/9, Poland, would like to hear from anyone in Britain interested in exchanging Polish and East German kits for British and American aircraft kits, first and second world war types only. He would also like to exchange Polish aviation and modelling magazines for *Airfix Magazine*. Emil Cincara, Praha 10, Malesice, Nad uzlabinou 445, Czechoslovakia, would like to exchange aircraft and railway kits for similar British kits. He writes in German. Alistair Brown, 6 Manor Close, Abbotte Ann, Andover, Hants., would like to hear from anyone in his age group (16), preferably in Japan, interested in 1:72 scale aircraft models. He would also like any information on August Euler and his designs. Lionel Wright (14), 6 Grange Way, Rochester, Kent, would like to correspond with anyone interested in 1914-18 period aircraft. Bohumir Hyneck, 28 plukn c.35, Prahato-Vrsovice, Czechoslovakia, would like to hear from anyone interested in exchanging *Airfix*

probably be the Highland bonnet which can be either carved from the 8th Army steel helmet or the helmet can be left as it is for the 1916 period.

Stephen Partridge, Rugby, Warks.

Wessex markings

IN a letter published in the June issue of AIRFIX magazine, Mr Adrian Balch states that all the Wessex helicopters of 18 and 72 Squadrons carry the legend 'Air Support Command' on both sides of the fuselage. I wish to point out that this marking is not currently carried by the helicopters of No 18 Squadron.

I am sending photographs showing two of No 18 Squadron's aircraft early in June and neither carry the 'Air Support Command' marking. Aircraft from the squadron took part in the Army Display at Catterick on June 7 last, and these too did not have the marking. The Wessex drawings published in the 'Colours 1968' article (March issue) are therefore correct and show the markings still in use on 18 Squadron's aircraft.

I also send a photograph showing the markings carried by the Jet Provosts of the Royal Air Force College 'Cranwell Poachers' aerobatic team. These aircraft have the new red, white and grey colour scheme described on page 314 of the March AIRFIX magazine with blue 'Cranwell bands' around their fuselages. Tip tanks are red with 'CRANWELL POACHERS' in white letters. My photograph shows XS181:96, and other Jet Provosts used by the team are XP555:70, XP556:71, XP583:87 and XP584:88, all of which have the same colour scheme.

E. Taylor, Newcastle upon Tyne.

Making figures

HOW nice it was to be again taken back to Skybird days in the February issue.

Since your previous reference of about two years ago I have been renovating my nine Skybirds models but find that I have a deficiency of suitable figures and accessories although I have examples of all the

military figures except one, the despatch rider which is shown in the reproduction of the price list.

In the meantime I have had to increase my supply by casting items in lead. The technique is to get a rectangle of Plasticine about $\frac{1}{8}$ inch thick and of appropriate dimensions and press a number of figures into it so that half of each figure is immersed, the bases being on the perimeter. The Plasticine is surrounded by a cardboard or wooden wall and the figures lightly covered with some oil or grease. A Plaster of Paris mixture is poured to fill the top of the 'box' and should be at least $\frac{1}{8}$ inch thick. The mould is then left to dry naturally for two to three days before the Plasticine is removed and the second half of the mould made. It is essential that the mould dries out before any attempt is made to dislodge the figures which in any case must be done delicately.

Lead tends to be too soft for casting models that might have a certain amount of usage and where definition is important, as in the case of 1:72 scale, so that it is advisable to obtain something containing tin, such as tinmans solder, and add about 50% of lead to it. The mould should be held together with elastic bands and the molten alloy poured into it carefully so that the air has a chance to escape slowly. Failure to do this, especially with Jager castings, can produce spitting and will be enhanced with a damp mould. The castings will soon cool down and can be removed; the mould should be coated with grease before each cast. Careful use of the moulds will ensure a fair number of castings for the normal requirement and with practice more ambitious figures can be attempted. I have found that the Skybird figures come out quite well; they are just about the smallest scale to do so as they can take the necessary cleaning up with knife and file without destroying too much detail. As it may be difficult to cast the figures with a base, this can be omitted or snipped off if cast and found to be an unsightly appendage. The figure can then be soldered or cemented to a suitable base.

G. A. Bay, Barnet, Herts.

Magazine for Czech aviation magazines. He is an engineering student and writes in English. Edmund Hood, 27 Cross Street, Kirkcaldy, Fife, Scotland, would like to correspond with anyone in Australia or New Zealand interested in aircraft or warships. T. Cvanar, Palackeho 114, Melnik, Czechoslovakia, would like to hear from anyone in Britain interested in supplying him with British or American car kits and die-cast cars in exchange for East European kits and magazines. Jacek Hoper, Warsaw 33, ul Paryska 17 m.46, Poland, would like to hear from anyone willing to exchange *Airfix Magazine* monthly for Polish magazines. Robert H. Kronenburg, 440 Mill Street, Liverpool 8, would like to correspond with anyone else sharing his hobby of modelling spacecraft. V. A. Lukoianov, Lodochnaia ul d.21, k. 1 Kv. 11, Moscow D-362, USSR, wishes to exchange Russian, Polish, and East German kits for British and American kits. He writes English. Dr Vladimir Mokros, Jecminkova 30, Prostějov, Czechoslovakia, would like to hear from anyone in Britain willing to exchange *Airfix* kits for East European kits, magazines, and Czech stamps. He is mainly interested in World War 2 aircraft and writes in English. Alejandro V. Dycucco, 1270-D Santiago de

Vera, Tondo, Manila D-402, Philippines, would like to hear from anyone in the 21-31 age group interested in aircraft and tank modelling and wishing to exchange kits and pictures. Brian Smith, 'Dakota', 4 Eastholme, Hayes, Middlesex, is compiling a history of RAF Dakotas and would like to hear from anyone who has any information on aircraft and units, etc. He is particularly keen to identify aircraft serving with specific units. Tim Barnaby (12), 48 Baydale Road, Darlington, Co Durham, would like to hear from anyone his own age interested in model trains and slot-racing. Michel Darribehaude, 14 Allee des Freres Lumiere, 33 Bordeaux-Cauderan, France, would like to hear from anyone his age (17) in Britain interested in aircraft models, mainly RAF, from 1918 to the present. He writes English. Zdenek Bryna, Perknov 809, Havlickuv Brod, Czechoslovakia, would like to hear from anyone in Britain willing to exchange *Airfix* kits for East European kits, magazines, or Czech cut glass.

CAVALIER MUSTANG

Simple conversion by C. R. Whitton

THE Cavalier is a two-seat conversion of a late production P-51D Mustang and differs from the military Mustang in that the armament is removed, the airframe is stressed for aerobatics, a second seat is installed and provision is made for either larger underwing fuel tanks or wingtip tanks.

1. Fuselage and Wing Assembly. Stages 1-4 as in the kit instructions. Then make new dorsal fin from plastic wood and file fin tip to squarer shape (e, d). When the dorsal fin is dry it can be sanded to shape and filled with clear dope. The nose cooler duct can be opened out with a fine file and the guns cut from the wings. Some aircraft have a small black navigation or radio bulge on the rear fuselage, this can be made from plastic wood or balsa (f).

2. Undercarriage Assembly. Stages 5-7 as in the instructions. For a model with no tanks the locating holes in the underside of the wing should be filled with plastic putty and sanded smooth.

For a model with tanks the original tanks should be made up and when dry covered with plastic putty to give the shape as in Fig 2. The tanks should be sanded to shape and filled with clear dope. You may, of course, have some drop tanks left over from other kits which are suitably elongated and obviate the need to modify the Mustang tanks.

For aircraft with underwing tanks, larger wing pylons should be made $\frac{1}{16}$ inch deep from plastic card which should be cemented in place when the cartridge ejection ducts in the underneath of the wing are filled in. When the pylon is dry, the tank can be cemented in place.

For a model with tip tanks, the wing tips should be cut as in Fig 3 along line A/A and the tanks cemented in place.

3. Transparency Assembly. Stages 10-12 as in the instructions. Then as follows:

- 13—Make two seats from spare plastic and later cement occupants in place (if desired) with their heads in the position shown in the drawing.
- 14—The inside of the cockpit should now be painted if required, silver with black dashboard.
- 15—Cement the canopy in position and if the stand is not wanted then fill in slot and sand down.
- 16—The aircraft should now be sanded and can be completed in one of the colour schemes shown in the sketches.

Colour schemes

(1) **Trans-Florida Aviation Cavalier 2000** (Wing tip tanks). All silver except for red trim stripes on tail and fuselage and tanks. Registration N5421V in black on sides of fuselage only.

(2) **Conversions by De Ponti Aviation of Minnesota** (Underwing or no tanks).

(a) All light yellow except for red trim on tail, fuselage and tanks. Registration N6356T in black on rear fuselage only.

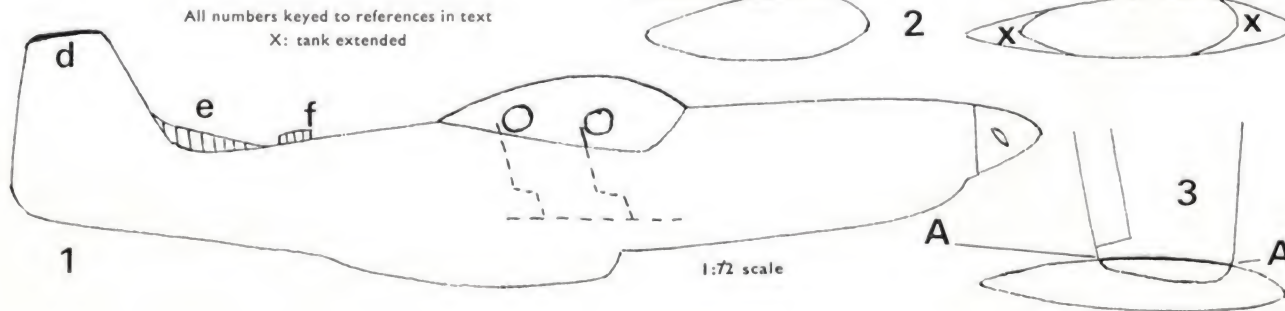
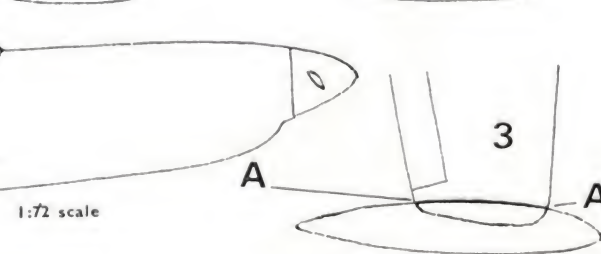
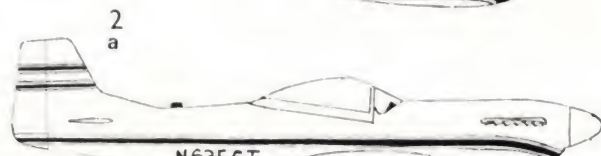
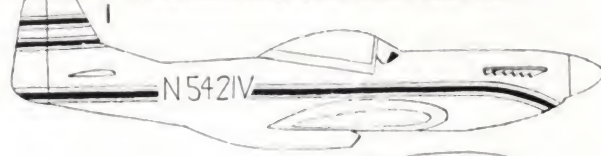
(b) Black rear fuselage and silver front fuselage with black trim line. White canopy surround, spinner, registration N2869D, and fuselage bands.

(c) As (b) above except for white rudder and white registration N5482V incorporated in USAAF type code 'LN-V'. The US Star and Bar is in the standard blue and white.



Aircraft (b) and (c) are owned by two Seattle business men. The trim stripes on the aircraft are made from Yeoman colour sheet transfers cut to shape and the registrations are made from Yeoman letter/number sheets.

Model shown above depicts N6356T, drawn below



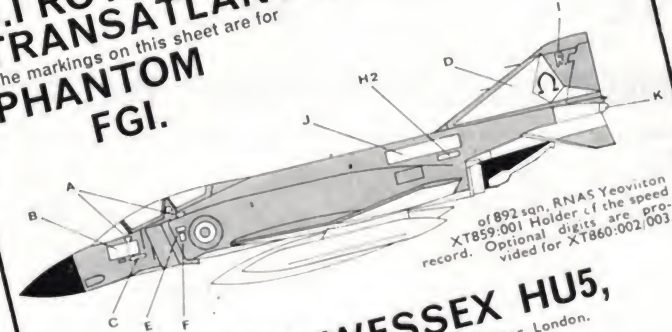
All numbers keyed to references in text

X: tank extended

1:72 scale

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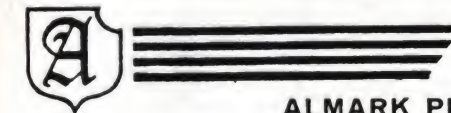
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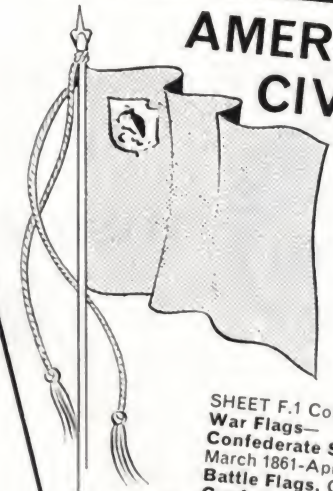
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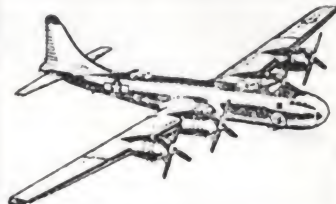
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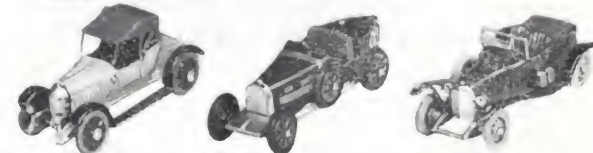
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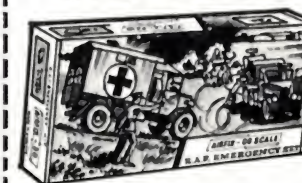
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